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LOGISTICS COMMAND AND CONTROL TASK AND TRAINING ANALYSIS

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This paper documents the collection and analysis of Logistics Command and Control task and training requirement data for positions in the Headquarters Air Force Logistics Command Battle Staff. Data were obtained by reviewing pertinent documents and regulations, including after-exercise critiques, and by interviewing Battle Staff position holders. Tasks were broken down into basic or "primitive" subtasks. Each of the basic subtasks was related to the interface (people or organization) needed to accomplish the subtask or otherwise asscciated with the subtask. In addition, each subtask was related to the systems and equipment needed to perform the job. The study found that additional research into Logistics Command and Control training problems and the training methodologies that would best resolve those problems is warranted. The actual data collected in the study is contained in a hypermedia document called, "Air Force Logistics Command Battle Staff Operations."

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SUMMARY

In response to AFHRL's sensitivity to growing concern on the part of senior Air Force management that insufficient research has been done in the area of logistics command and control (Log C^2) training, Systems Exploration, Inc. (SEI) was contracted to collect and analyze Log C^2 task and training requirement data for positions in the Headquarters Air Force Logistics Command (HQ AFLC) Battle Staff. The scope of this task was narrowed mainly to the tasks performed by the Battle Staff Director (BSD). The task analysis was delivered in hypermedia format under separate cover. The training analysis and recommendations for continued research are contained in Section V of this document.

Data were obtained by reviewing pertinent documents and regulations, including after-exercise critiques, and by interviewing Battle Staff position holders. Tasks were broken down into basic or "primitive" subtasks, i.e., they could not be further reduced. Each of the basic subtasks was related to the interface (people or organizations) needed to accomplish the subtask or otherwise associated with the subtask. In addition, each subtask was related to the systems (management information systems such as the Weapon System Management Information System (WSMIS) and/or documents, regulations, etc.) and equipment (phones, computers, etc.) needed to perform the job.

This study found that additional research into Log C^2 training problems and the training methodologies that would best resolve those problems is warranted. The hypermedia program, "Air Force Logistics Command Battle Staff Operations," a separate deliverable of this effort, with the modifications outlined in Section V, would serve this research well. In addition to adaptation as a desktop training aid, the system also shows potential for use as a job/decision aid for use in actual contingencies.

PREFACE

The purpose of this task was to survey a logistics command and control (Log C^2) node to (a) delineate the job tasks of a selected position within the node, i.e., the Battle Staff Director (BSD), and (b) interview individuals assigned to the Battle Staff to determine what training they have received, what training they think is necessary, and what training they desire. The job task and training analyses and the hypermedia document produced from this task will help the Air Force Human Resources Laboratory (AFHRL) develop a comprehensive and effective Log C^2 training strategy based on established Log C^2 training needs and recommended training methodologies.

This task is part of an AFHRL/LR in-house work unit task plan, begun January 1989, entitled "Logistics Command and Control Training Needs." This plan was developed to support Air Staff-directed research under its Logistics Strategic Planning initiative. This initiative defined what Log C^2 is, identified the minimum essential information between logistics positions, and developed a Log C^2 concept of operations.

Systems Exploration, Inc., (SEI) thanks Mr. Wallace Beard and Captain Santa Stone, Air Force Logistics Command Logistics Operations Center/Command and Control Division (AFLC LOC/XOO) for their assistance in this project. Specials thanks go to Major Robert F. Hall for his guidance, expertise, and assistance in developing the hypermedia document.

Principal SEI investigators for this task were Mr. Arthur Schwaninger, Mr. Benedict Malin, and Ms. Colleen Gumienny.

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I. INTRODUCTION

Background

Logistics command and control (Log C^2) is receiving increased attention from senior Air Force management. Peacetime logistics duties lack the urgency of contingency/wartime logistics activities. Other differences include the setting, e.g., a command post/response cell with different/additional equipment in lieu of the familiar office and usually a much shorter chain of command between the logistician and the commander. Another difficulty is training for a particular contingency or general war; exercise scenarios may not match what would actually happen in world affairs, and the cost of logistics actions that would normally be taken are so prohibitively high that virtually all exercises are, for the most part, purely simulations. As a result of their concern, the Air Staff incorporated Log C^2 research into the Logistics Strategic Planning initiative.

In support of that initiative, the Air Force Human Resources Laboratory (AFHRL) has begun a five-phase in-house research effort in Log C^2 training needs. The plan is to identify and document Log C^2 training needs, create training methodologies, and ultimately design and demonstrate training vehicles specifically for Log C^2.

In support of phase four of the AFHRL task plan, Systems Exploration, Inc. (SEI) was required to perform job task and training analyses of a typical logistics node in the Air Force C^2 system. Specifically, SEI investigators were to collect job task information (using a cognitive task analysis approach) within a theater-level C^2 node (the Pacific Air Force (PACAF) Contingency Support Staff (CSS) at Hickam Air Force Base, Hawaii) and survey the individuals as to their training experience (what training they had actually received relative to their Log C^2 position), what they thought of its adequacy, and how they thought it could be improved. The questionnaire used for the survey is in Appendix A. The survey results are published in their entirety in Appendix B; the results are analyzed in Section IV of this report. First, however, it is necessary to discuss our rationale and other factors that caused us to deviate from the original task planning.

Rationale and Constraints

Our original task was to analyze positions with the PACAF CSS at Hickam Air Force Base. The PACAF CSS had been selected because of its status as a theater-level C^2 node employing an augmentee-staffed Log C^2 element and because of the cooperation and support PACAF provided in producing a training package specifically aimed at rapidly training augmentee

personnel (PACCITS, 1989). In addition, Headquarters U.S. Air Force/Logistics Plans Division (Hq USAF/LEXX) had recently conducted a study into the logistics command structure and information flow of several Air Force theaters, including PACAF. The use of PACAF in this effort would therefore provide some continuity. It soon became apparent, however, that primarily because of manpower adjustments beyond their control, PACAF could not support the Subject Matter Expert (SME) interview time required by the project. Therefore, an alternate Log C^2 node was needed. The alternate logistics node selected was the Headquarters Air Force Logistics Command (HQ AFLC) Battle Staff.

A second major deviation was caused by changes to the Air Force command post exercise schedule. Our original tasking was to observe and interview Log C^2 augmentees while they were performing Log C^2 duties as part of an Air Force-wide command post exercise. Changes in the Air Force exercise program forced us to interview the augmentees in a nonexercise setting. The combination of site/node and exercise atmosphere changes had curious as well as both positive and negative effects on the data collection aspects of the task. These changes are summarized below; the effects are discussed in Section IV.

AFLC involvement in war/contingency support goes beyond that of a theater-level node. AFLC's responsibilities may be global in nature. Their Log C^2 node activity spans a wide range, from a minimally manned response cell to a fully manned Battle Staff in support of global conflict involving all theaters, Services, and allied nations.

The AFLC Battle Staff rank and file membership is composed primarily of civilians. They are experienced in the performance of their peacetime duties but are more limited in their exposure to combat operations. Under normal circumstances, they are also much more familiar with their surroundings. That is, each augmentee does not need to be told the location of most of the facilities. However, at the time of this report, the AFLC Battle Staff area is undergoing a major upgrade in terms of both facilities and equipment. Consequently, Battle Staff operations are conducted in a temporary or interim site, which tends to cause some confusion. Furthermore, during the course of data collection, AFLC convened a Process Action Team (PAT), which examined Battle Staff operations from core responsibilities to detailed procedures. The findings and recommendations of the PAT are unknown at this time. The duties outlined in this report and the accompanying hypermedia document reflect those in effect prior to the PAT review.

Finally, the fact that there was not an exercise in progress at the time of our interviews with the SMEs/augmentees resulted in less stressful and more relaxed interview conditions. The non-exercise interview did not interfere with or detract from exercise play. However, interviewees had to rely on their memory to a greater extent than they would have under exercise conditions. Also, the reductions in the number of exercises conducted in the past year and the greater length of time between them could have had some effect on the amount of data they were able to provide. Hence, primary sources used to gather data included exercise critique documents for "Proud Eagle '90" and "Wintex/Cimex '89," (including the Remedial Action Project (RAP) items) and other documentation provided by the interviewees.

In summary, the revised task goals were to collect job task information within the HQ AFLC Battle Staff Log C^2 node, survey Battle Staff members as to their training and training requirements, and specifically to document the Battle Staff Director (BSD) position duties. One can assume an individual selected to fill a position on the HQ AFLC Battle Staff meets certain knowledge and experience requirements. This assumption is especially critical in the case of the BSD who must also meet higher standards in managerial skills and grade requirements. The skills required of the BSD are primarily those of a senior manager with a fairly extensive knowledge and sense of the functional duties of all members of the Battle Staff. The BSD must also possess and have demonstrated good judgment, and be able to make decisions of considerable consequence based on available information.

However, we must distinguish between the skills and knowledge required to perform peacetime duties and those required to function in a C^2 capacity. For example, members of the Battle Staff in a purely "functional" capacity such as a Transportation Representative do much the same thing they do in peacetime, albeit more of it and faster. Others, such as the BSD, the focus of this study, do not have equivalent duties in peacetime, as explained in the Job Task Analysis portion of Section IV. It is not the purpose of this task to determine the training requirements to make the Transportation Representative a better transporter. That type of training is more properly the domain of conventional Air Force Specialty Code (AFSC)-type training methods, e.g., formal technical schools, formal on-the-job training, correspondence courses, Air Force Institute of Technology (AFIT) continuing education courses, and so on. This task will focus on the duties of the Log C^2 individual peculiar to C^2 node operations. It is worth noting, however, that some of the findings of a follow-on to this study, which examines the more functional Log C^2 node representatives, would be appropriate for and therefore should be incorporated into the basic AFSC-type training programs and media, since Command Post/C^2 duty may be considered one facet of the basic specialty.

The situation in the Middle East at the time of this report prevented our obtaining final feedback from AFLC Battle Staff personnel. It was our intention to demonstrate the hypermedia document in the context of a training aid in conjunction with a BSD training class. It was also our intention to allow novice BSD/Special Action Officer (SAO) trainees as well as other, more experienced Battle Staff personnel to interact with the hypermedia deliverable at their own pace to get their assessment of the system's utility and application to their particular needs. However, security requirements and duty schedules brought on by the deployment of U.S. troops to Saudi Arabia precluded acquisition of these data. A demonstration to AFLC Logistics Operations Center/Command and Control Division (LOC/XOO) personnel, however, was well received. Section IV contains a strong recommendation that AFHRL persevere in pursuit of this type of feedback information because of its value to further Log C^2 training research. It is our opinion that the data gathered by this technique would be more beneficial than that obtained by questionnaire.

II. TASK PREPARATION

Task Analysis Data Approach: GOMS

SEI was tasked to organize the task analysis data by categorizing the goals, subgoals, methods, selection rules, and operators for the Battle Staff position(s) to be examined. This technique is known as the GOMS (Goals, Operators, Methods, and Selection Rules) Task Analysis Approach. (Card, Moran, and Newell, 1983; Kieras, 1989; Kieras, 1988). A brief description of the GOMS terminology follows.

Goals: Goals are activities the user tries to accomplish, usually a hierarchical arrangement of goals and subgoals. Goals are expressed as an action pair of the form {verb noun}, e.g., goal: {Ensure Adequate Staffing}, subgoal: {Analyze Initial Situation}. Goal accomplishment may require first accomplishing one or more of the subgoals.

Operators: Operators are actions the user executes. There is a difference between goals and operators. While both take the action-object form, a goal is some purposeful thing to be accomplished, whereas an operator is simply an executed act. However, in our data gathering/analysis for the BSD we quite often encountered situations where differentiation was either difficult or served no useful purpose. For example, internal nonobservable actions performed by the subject are "mental operators" in GOMS terminology. Many duties required of the BSD are in fact mental operators, such as making a basic decision and setting up a new goal/subgoal to be accomplished. Thus, there was no point in distinguishing between a BSD

subgoal and the very next level--a primitive operator, i.e., an operator that could not be broken down into a lower-level operator. Therefore, BSD job tasks can be adequately analyzed at the subgoal level.

Methods: A method is a sequence of steps to accomplish a goal/subgoal. The steps usually consist of an external (observable) operator or a set of mental operators involved with setting up and accomplishing a goal/subgoal. A goal may be achieved by one or more alternate methods, in which case selection rules must be defined to use the optimum method.

Selection Rules: Selection rules are used to ascertain the best method to employ in achieving a goal. The existence of multiple methods implies that the goal/subgoal should be decomposed into a set of specific goals, one for each method, and a set of mutually exclusive conditions should be described that specify which method should be used in what context.

Again, we ran into difficulty documenting methods and selection rules as they applied to defining the BSD's duties. For example, there often were no alternate methods which therefore negated the need for a selection rule. Also, since there were no alternative methods and since goals/subgoals were insufficiently removed from a set of primitive operators, the job tasks of the BSD were adequately described by the set of goals/subgoals alone. In summary, the GOMS technique, when used as a cognitive task analytic technique, has difficulty in capturing, describing, and analyzing a job position as unconstrained and diverse as a BSD. Therefore, we supplemented the GOMS technique with structured interviews and questionnaires discussed below.

Data Collection and Processing

DCAPS versus Hypermedia

To meet task requirements, SEI task personnel learned the use and application of the Data Collection and Processing System (DCAPS) Task Editor Module. This training was accomplished in March 1990. DCAPS consists of four software components: (a) the Task Analysis Editor (TAE), (b) the Positional Interaction Data Entry Module (PIDEM), (c) the System Manager (SM), and (d) the Report Generator (RG). The TAE component supports the hierarchical decomposition of positional duties into tasks, subtasks, activities, and steps. Additionally, the TAE collects task information on criticality, frequency, information and equipment required, and triggering stimuli. The PIDEM component supports the mapping out of communication flow between C^2 nodes. The SM provides general housekeeping capability, e.g., utility/user name/organizational structure,

thesaurus editors, and utility/quality control reports. The RG provides reports on organizational structures, duties by organization or position, communication flow, and equipment usage. The RG produces either a screen image or a printed version of each of the eight report formats available.

Since the key to using DCAPS is through the use of a structured interviewing technique and since it would be impossible to enter data into DCAPS at the interview site, we decided to use structured interview forms to facilitate data capture and later transfer the data from the forms into DCAPS. Interview forms were designed to capture the data elements required by GOMS, DCAPS, and portions of the PACAF Command and Control Information and Training System (PACCITS). Specifically, in addition to GOMS data, the forms were designed to capture data relative to the interfaces (the people and organizations with whom the incumbent interacted when performing each task), systems and documents (the management information systems such as Joint Operational Planning System (JOPS)), and the supporting documents and regulations needed to refer to such as the Air Force Logistics Command Regulation (AFLCR) 55-2 (1989) and HQ AFLC Crisis Action Procedures, as well as the equipment involved in each task. The interview forms are in Appendix C. For the sake of brevity, we have consolidated three normally full page forms on each page.

In the end, data were entered directly into a hypermedia document with no loss of functionality. That is, hypermedia software can produce the same structured approach, relating goals to subgoals, to organizations and equipment, etc., as does DCAPS. Since a deliverable in hypermedia format was required, and since the data could be readily analyzed in the hypercard format, there was no need to duplicate the data in a superfluous DCAPS format/data base.

Hypermedia: SuperCard versus HyperCard. SEI was originally tasked to document the job task analysis data using the SuperCard application from Silicon Beach Software. Toward this end, SEI developed familiarity with the features of SuperCard. Early on, however, it was decided to use the more familiar HyperCard application. The rationale supporting this decision is as follows. It is a simple matter to convert a HyperCard stack to SuperCard, should the government later want to convert to the SuperCard format. It is not a simple matter, however, to convert Supercard to Hypercard. HyperCard scripting and external commands can be used to enhance its capabilities. For example, Hypercard scripting was used to provide horizontal scrolling fields and clickable fields used extensively in this application. Finally, HyperCard is readily available to anyone owning a Macintosh computer, including the government and specifically PACAF and AFLC.

Therefore, no additional purchases by the government would be required and, more important, government users of Macintosh/HyperCard would require little or no additional training to implement a similar spin-off training/job-aiding application.

Previous Efforts

SEI was specifically asked to review Training of Battle Staff and Commanders Assigned to Tactical Command and Control (C^2) Systems (AFHRL-TP-87-38) (Brecke and Jacobs, 1988) because of its application to the problems of gathering data about C^2 positions and developing training-related questionnaires. As a result of this review, SEI discarded the conventional "Blue Flag" interview technique and experimented with the Cognitive Map Elicitor (CME) approach recommended by the study. During the course of our investigation, we found that the CME approach was equally unsatisfactory and developed the interview forms shown in Appendix A. Even these forms, however, proved somewhat unsatisfactory because of the previously mentioned difficulty in adapting the GOMS technique to the duties of the BSD. The training questionnaires, however, required only minor modifications to satisfy the needs of this study. The training questionnaires are in Appendix B. The total responses are shown verbatim in Appendix C. The questionnaire results are analyzed in Section IV.

SEI also reviewed the PACCITS hypermedia presentation produced for AFHRL and PACAF in 1989 (PACCITS, 1989). This effort clearly showed the value and potential of an interactive hypermedia presentation as a training tool and/or job-aiding device. Particularly noteworthy of the PACCITS effort was the artwork and the ease with which one navigated through the presentation. This type of presentation was very well received by PACAF personnel as was the potential for a similar effort when PACCITS was demonstrated to HQ AFLC personnel at the outset of this effort. It was originally thought that much of the PACCITS presentation might be common to the AFLC Battle Staff environment and, therefore, could be imported. However, the differences between the duties of a PACAF augmentee and those of the HQ AFLC BSD are so vast in terms of the need to operate equipment and the equipment itself that no importation could take place. For example, equipment that was seemingly "common" to both a PACAF augmentee and the HQ AFLC BSD was the Secure Telephone Unit (STU) III. However, even that could not be imported since PACAF uses AT&T and General Electric units while the HQ AFLC Battle Staff uses Motorola equipment. While the functions and features are basically the same among all three, the physical appearance and design layout are completely different. The biggest difference, however, was in the use of equipment. Apparently, PACAF augmentees must know how to manipulate briefing equipment, load paper into printers, etc. The HQ AFLC Battle Staff personnel,

(those in C^2 positions), do not operate equipment, except for the possible occasional use of Battle Staff Management System (BSMS) terminals. Even BSMS, however, is run primarily by administrative support personnel, not people in a C^2 decision-making position. The World-Wide Military Command and Control System (WWMCCS) is another good example. WWMCCS is common to virtually every C^2 center in the U.S. military. PACCITS contains detailed data and instructions on how to log-on/log-off or otherwise physically use WWMCCS equipment. At HQ AFLC, the WWMCCS equipment is physically removed from the BSD's immediate work area. The BSDs are, of course, dependent on WWMCCS products, facilities, and services; they simply do not get involved with the equipment on a hands-on basis.

Air Force/AFLC Logistics C^2 Structure Familiarization

We reviewed the Air Force and AFLC Log C^2 structure as outlined in Air Force Pamphlet AFP 400-77 (1990). SEI also reviewed AFLC specific C^2 literature, i.e., HQ AFLC Battle Staff Operations (AFLCR 55-2, 1989). It should be noted that a new draft regulation (HQ AFLC Crisis Action Procedures, AFLCR 55-2, 1990) revises both AFP 400-77 and the current version of AFLCR 55-2 (1989). We also extensively reviewed the Battle Staff Position Books of several key members of the HQ AFLC Battle Staff to be as well informed as possible prior to the interviews and to use the information gained to assist in preparing the structured interview forms.

III. DATA ACQUISITION

Job Task Analysis Data

Job task analysis data were obtained from three primary sources:

1. Job-related documents and regulations such as the Battle Staff Position Books and AFLCR 55-2 (1990).
2. Interviews with Battle Staff position holders.
3. Exercise critiques and conference minutes.

The first step in the data gathering process was to review the pertinent documentation and develop an outline of the position's major responsibilities. Next, interview questions were designed to elicit as much information as possible. After these preparatory steps, interviews were scheduled with the incumbents and conducted either in the office of the position holder or in the AFLC LOC/XOO conference room. All interviews were conducted in an informal atmosphere

with one incumbent and two SEI interviewers. Interviews began with an explanation of the nature of our task and how the information would be used. We next reviewed our information requirements and interview expectations, including a brief description of the GOMS methodology. While the GOMS methodology appeared to be well understood by each interviewee, we found it a difficult interview regimen to follow. Better results were produced when each interviewee provided the information in his own words, without concern for alternate methods, selection rules, or operators. Each interview sought information in the following sequence:

1. Major responsibilities (goals)
2. Subordinate tasks (subgoals)
3. Interfaces (people/organizations involved in the goal/subgoal)
4. Systems/documents (information systems, e.g., JOPS, Contingency Operations and Mobility Planning and Execution System (COMPES), and/or documents and regulations necessary and applicable to the task)
5. Equipment (the equipment they were required to operate in the performance of the task).

As stated earlier, a major difference between the typical PACAF augmentee (based on the information in PACCITS)) and the AFLC BSD was that except for commercial phones/secure STU-III and on rare occasions the BSMS, the AFLC BSD was essentially removed from operating any equipment. On the other hand, the AFLC BSD was required to have a healthy understanding of the information contained in most, if not all, information management and planning and execution systems used by any subordinate member of the Battle Staff. A more detailed job task analysis is in Section IV.

Training Analysis Data

Training analysis data were also obtained from three sources:

1. A training questionnaire
2. Interviews
3. Exercise critiques

SEI polled individuals serving in Battle Staff positions (with emphasis on the BSD position) to determine their Air Force specialty, Battle Staff experience, the training they received in preparation for and during their tenure on the Battle Staff, their perceptions of the adequacy of

their training, and improvements they would recommend for future battle staff training. The questionnaire is patterned after the questionnaire used in Training of Battle Staff and Commanders Assigned to Tactical Command and Control (C^2) Systems study (Brecke and Jacobs, 1988). Since the goal of the questionnaire was much the same, little change was necessary.

All interviewees were given the questionnaire at the conclusion of the job task analysis interview. The questionnaire format was explained and any questions were answered prior to allowing the individuals to fill out the questionnaire at their own pace in their own office environments. Also, during the course of the job task interview, training issues and experiences were often raised.

Finally, normal training or training in preparation for an exercise was the subject of many exercise critique items. This information is discussed in the analysis in Section IV.

IV. ANALYSIS

Job Task Analysis

The primary focus of this portion of the task was to document the BSD's duties using a cognitive task analysis approach (other Battle Staff positions were documented because of their relationship to and effect on the BSD's duties). This approach employs the GOMS technique to delineate job tasks through an expansion of goals, methods, selection rules, and operators. In deference to the tasks analyzed in the Training of Battle Staff and Commanders Assigned to Tactical Command and Control (C^2) Systems (Brecke and Jacobs, 1988) study, job tasks in this study were limited to those performed in the context of the Battle Staff position being surveyed. For example, the position of the BSD has meaning only when the Battle Staff is convened. There is no peacetime BSD position nor is there an Air Force speciality or an Air Force-wide institutionalized training program for BSDs. During peacetime, the BSD may be a transporter, airlifter, or an expert in communication systems. There are no prerequisites for BSDs as far as a specific area of logistics expertise is concerned. When the Battle Staff is convened, they lose their "specialist" identity and assume what are primarily purely command or leadership positions. This is not the case, however, for all of the "specialist" positions of the Battle Staff. Some remain experts in their particular specialties and are concerned almost exclusively with the same tasks they perform in peacetime. The primary difference is that the level of activity and urgency has increased dramatically from peacetime levels. Again, this task was not to examine in depth those Air Force speciality or standard skills, only those skills which separate peacetime duties from those

performed in the context of Log C^2 node operations. Training was to be aimed at improving Battle Staff performance, not specialty performance. Perhaps it is also worth reiterating at this point that specialist positions are filled by personnel with demonstrated "technical" knowledge of their logistics discipline while BSDs are selected on the basis of their overall knowledge of AFLC operations, commensurate with the grade and leadership qualities needed to perform in this highly visible and responsible position.

The leadership and/or managerial aspect of BSD duties created an additional problem. That is, it is very difficult to document these kinds of tasks using the GOMS technique. BSD duties are, due to the nature of a command position, rather vague. The most experienced and senior BSD described his role as that of a catalyst. He was there to draw the best performance out of the rest of the staff. He encouraged innovation and initiative. He acted promptly on items needing a decision on his part so as not to rob the action officers of valuable time they could use to "make it happen." Therefore, the GOMS technique breaks down in the capture of BSD duties below the subgoal level. There are simply too many alternatives to consider, all of which are situation dependent, and all of which involve a decision or "internal operator" early on. Also, these decisions are all based on the judgment of the BSD; they may be right or they may be wrong. The BSD's decisions are based to some extent on assessment of the caliber of the staff work/action officer involved. These are intangibles. To accomplish a given goal/subgoal, two different BSDs may use two entirely different approaches and both may be successful. There is no one selection rule applicable. The personality of one BSD may get things accomplished one way that another BSD could not. Had it been possible to interview BSDs prior to an actual real-world or exercise decision, they may not have been able to think of the same solution which seemed appropriate to them during the actual event.

A third factor bearing on the duties to be performed by the BSD was the fact that HQ AFLC is undergoing a major facility rehabilitation and possibly major restructuring of the Battle Staff concept of operations as well. The facility rehabilitation involves placing more equipment within the Battle Staff area than that of recent years (when the current BSDs were gaining their experience). However, from at least the BSD's perspective, equipment operation is not an essential part of Log C^2 duties/job knowledge requirements. Currently, most AFLC Battle Staffers, and especially the BSD, do not operate any equipment except the phones/STU-IIIs. Messages transmitted and/or received over Automatic Digital Network (AUTODIN) or WWMCCS equipment are first handled by administrative support/equipment specialists. The messages are hand-carried by "runners" to appropriate distribution points. On very rare occasions do the Battle Staffers

actually interface with the equipment itself. There are exceptions, of course. The Contingency Operations Deployment Action Team (CODAT) and the Manpower and Personnel Readiness Center (MPRC) members are often assigned to WWMCCS terminals.

Some restructuring of the Battle Staff concept of operations has already taken place. Battle Staff make-up (size and functional responsibilities) has changed since the publication of AFP 400-77 (1990) and AFLCR 55-2 (1989). The governing document is the draft AFLCR 55-2 (1990), which reverts to an organizational orientation as opposed to the functional orientation developed for and specified in the previous two publications. During the course of gathering data for this study, a PAT was convened to examine the entire set of existing C^2 functions for AFLC. The results of the PAT's actions are not known at this time. It is not expected to change the duties of the BSD much, however, since the primary duty of command/leadership will undoubtedly remain the primary duty. For example, if the size of the Battle Staff is reduced, the BSD's duties will change in that there are fewer people with whom to interface, but the management responsibilities for Battle Staff performance will remain the same.

Furthermore, changing the focus of the task from PACAF to AFLC broadened the BSD's responsibilities because the project's scope expanded; whereas the Log C^2 node of PACAF CSS as described by PACCITS is limited to the Pacific Theatre, AFLC has a worldwide scope (Pacific, Middle East, Europe, and so on). That is, while PACAF deals with "tactical" aircraft within the geographical limits of the Pacific, AFLC knows no such weapon system, boundary, or even country limitations. The AFLC theater is literally the entire world and the equipment supported is "all." This global scope strengthens the argument for studying the AFLC BSD's duties because the AFLC BSD can be involved in many more operations, from covert actions to limited combat operations (such as those in Panama and Grenada) to large-scale war. Furthermore, the PACAF Logistics Execution (the PACAF equivalent of BSD) is much closer to the action. The AFLC BSD is further removed from the action because the operating/combat commands will usually deal directly with the Air Logistics Center having responsibility for the goods or services (logistics) they want. Therefore, it is more difficult for the AFLC BSD to get firsthand information on operations and thus more difficult to make crucial decisions. This issue must be considered in any training scenario for Battle Staff members.

In questioning Battle Staff members to find out what skills, knowledge, and training they needed most to improve job performance, the answer was always the same: a working knowledge of "other " positions'/organizations' responsibilities. Another dimension of this problem is lack of

proper coordination by some action agencies. Actions taken by Battle Staffers without recognition of the impact of the action on another agency or agencies can be the cause of major problems. Knowing with whom to coordinate is an important element of every Battle Staff action.

The GOMS delineation of the BSD's Log C^2 tasks is contained in a user-friendly and easily analyzed format in the hypermedia document, "AFLC Battle Staff Operations," delivered August 1, 1990. In addition to the job tasks, the hypermedia presentation also relates each subgoal or task to the interface (person or organization) with which the BSD may have to deal in the performance of that task. Due to the variations of the task imposed by scenario specifics, for any given instance of task performance, the interfaces involved could include none, one, or all the interfaces listed.

The hypermedia job task analysis also relates each subgoal to the system (i.e., management information system such as the Weapon System Management Information System (WSMIS) or Aircraft and Missile Maintenance Production-Compression Report (AMREP), and so on) involved with task performance. As with the interface relationships, the scenario dictates which systems and/or documents may be involved. The presentation, therefore, serves as a sort of menu of possible sources of information the BSD may require to perform the task.

Finally, the hypermedia document links each subtask to the equipment that normally supports it. While it is not necessary for BSDs to know how to operate the equipment, they should have a sense of what systems and elements of essential information are borne by the various pieces of equipment and what the various "connectivities" are. This information would help assess the loss of a piece of equipment through either equipment or power failure. The BSD would understand the magnitude of the problem and institute prioritized recovery actions.

From the above, it can be seen that it is impossible to document all possible actions the BSD may take in the course of duties. The scenarios are too situation specific and the options too diverse and numerous to list. That does not, however, diminish the potential value of the hypermedia presentation as both a training tool and as a job-aiding/decision-aiding device. Desired training outcomes are embedded in both the descriptions of the various positions, interfaces, and systems, and in the linkages of these entities to the performance of each goal/subgoal. Further, the ease with which the presentation can be modified and/or updated will allow it to gain refinement, clarity, and added detail with each training session, exercise, and real-world situation in which it plays a part. Battle Staffers could customize the presentation to their own particular needs to suit the situation at hand. Access to such real-world, lessons learned data as may be found in a "used

and/or customized" hypermedia document such as the "AFLC Battle Staff Operations" document produced as a result of this effort, could prove highly effective in imparting knowledge and/or aiding future job performance/decision-making on the part of all Battle Staffers.

Training Analysis

The training analysis data were obtained from three sources as outlined in Section III: (a) a training questionnaire, (b) interviews, and (c) an analysis of exercise critiques. The questionnaire was adapted from the one used in AFHRL-TP-87-38 (Brecke and Jacobs, 1988). The first part of the questionnaire (Questions 1-7) collected statistical information about the respondent, e.g., Air Force speciality, grade, Battle Staff position experience, and total Log C^2 experience. Questions 8-12 were essay type questions that required the respondents to describe in their own words what skills were required for their Battle Staff position and to comment on the adequacy of the training they have had both in terms of content and training method. Questions 13-21 required the respondents to express their opinion on the comparison of their peacetime versus their wartime duties, the adequacy of their training, and their qualifications to perform in exercises and wartime. They were asked to express this opinion using a graduated scale as follows:

1. Strongly Disagree
2. Disagree
3. Agree
4. Strongly Agree

This technique permits computation of a numerical representation of the consensus. That is, the numerical average of all responses to a given question represents the group's combined opinion. This representation will be made clearer when examining some of the questionnaire responses later in this section. Questions 22-25 sought the respondents' opinion relative to performance criteria and requested a listing of duty-related documents. Finally, Question 26 allowed the respondents the opportunity to supply any additional comments they thought might enhance the analysis. A blank questionnaire is in Appendix B. A summary of all respondents' replies as they appear on the questionnaire is in Appendix C.

The grades of our respondents ranged from E-6 (Staff Sergeant) to GM-15. Experience levels in their current Battle Staff position ranged from one year to five years. The most experienced BSD has held the position for three years and has had a total of 12-1/2 years experience in Log C^2 positions. An interesting statistic appeared in the area of exercise versus real-

world experience. Most Battle Staffers, fortunately, have had only exercise experience. The MPRC representative, however, has had more real-world experience (over the same time period) than exercise experience. This fact indicates both the decrease in the number of exercises in the past several years and the fact that of all the positions on the HQ AFLC Battle Staff, the MPRC positions must closely resemble those of their peacetime jobs.

The rest of this section will highlight the most significant findings corroborated by both interview and exercise critique observations. The primary finding borne out by all three sources was that the skill most essential for good performance in a Battle Staff position is a broad knowledge of the various logistics functions and how the Command operates (Refer to Questions 8 and 12a). As pointed out in the Job Task Analysis, the place where training could do the most good is in providing a basic familiarization of the other Battle Staff position duties and responsibilities. All Battle Staffers must know the effect of their actions on other Battle Staff positions or at least which agencies/Battle Staff positions to coordinate with to ensure their efforts are not at cross-purposes. Ultimately, the BSD is responsible for ensuring proper coordination and sharing of critical information.

Analysis of the questionnaire responses, interviews, and exercise critiques reveals there are two types of Battle Staff positions: (a) Those whose duties are essentially the same as in peacetime and (b) those whose positions do not exist in peacetime. All questionnaire responses can be divided along these lines. Perhaps the most notable example is Question 15b. Respondents were asked whether their formal training prepared them adequately for wartime. All respondents felt (most felt strongly) that their formal training did not prepare them for wartime. The MPRC position, however, whose peacetime and wartime duties are similar, was the one exception. This difference in position types must be considered when evaluating questionnaire responses. This division was also apparent when asked what different skills were required for exercises, contingencies, and wartime (see Question 8a). This question brought up another important issue: the lack of realism of most exercises. This may be a difficult obstacle to overcome, however, because of the prohibitive cost involved. For example, cost and the time required essentially prevent compliance with most Defense Condition (DEFCON) changes or depot maintenance compression/acceleration actions.

Finally, our research revealed that formal Battle Staff training was inadequate. Most respondents did not receive any Battle Staff training. What training was provided was not related to logistics functions. It consisted primarily of general administrative procedures and floor layout and details specific to the exercise scenario about to occur. Most training was described as on-the-job

training. It should be pointed out, however, that this on-the-job training is different from formal on-the-job training as prescribed in AFR 50-23 (1982). The on-the-job training received by Battle Staff participants was of the type given by their immediate predecessors during shift changes. It could be considered synonymous with on-the-job experience. This finding is reinforced by the responses to Question 17 in which all respondents either agreed or strongly agreed that they acquired their skills on their own initiative rather than through systematic training.

We also identified training offered through the AFIT School of Systems and Logistics Professional Continuing Education Program (1988-1989). The program offers several courses that meet the needs expressed by the personnel who participated in this study. These courses are listed in Appendix E.

V. CONCLUSIONS and RECOMMENDATIONS

This study found evidence to support senior Air Force management's concern over the lack of understanding of Log C^2 activities and how they relate to operational C^2 functions as well as the lack of emphasis on improving both the quality and quantity of Log C^2 training. Budgetary restraints have decimated the command post exercise schedule and severely restrict the logistics actions that can be taken when exercises are scheduled. Further, exercises are often being relegated to lower-ranking, less-experienced, and less-trained people who, in all probability, would not perform Log C^2 duty in the event of an actual contingency or war. It is therefore imperative that Log C^2 training research be continued and the results of that research in the form of new and innovative training vehicles be quickly incorporated into vigorous training programs.

The BSD (or an equivalent position such as the Logistics Executive in the PACAF CSS) is the key to Log C^2 node operation. However, it is extremely difficult to begin Log C^2 task and training analysis by focusing first on this position. Future research should begin by examining the "technical" positions whose duties more closely reflect their daily/peacetime duties. As this research is completed, it will provide a detailed foundation to abstract up to the full realm of BSD duty/knowledge and training requirements.

Based on the research completed in the course of this task, the following recommendations are made:

1. AFHRL continue job task, training, and training methodology research relative to the Log C^2 nodes at both HQ AFLC and PACAF CSS. This research should focus initially on the more "technical" positions, i.e., those positions whose tasks more closely represent their peacetime duties. These duties can then be abstracted to the managerial tiers of Log C^2 node operations, such as the LOC Force Structure Director Group Actions Officer (GAO) and BSD. This information is important since it represents the most pressing need expressed by virtually all Log C^2 members--an understanding of the basic responsibilities of the "other" battle staff positions. To perform their tasks more efficiently, battle staffers should have some idea of the "big picture" or how their activities affect or are affected by the activities of others. This research would be very similar to that conducted during this task. The only difference would be the positions investigated.

2. AFHRL use the hypermedia document, "HQ AFLC Battle Staff Operations," as a research vehicle for continued study of the Log C^2 training problem. A similar document should be created for the CSS at PACAF. PACCITS did not identify key responsibilities or relate them to interfaces, systems, documents, equipment, and so on. Such a presentation, which included the basic responsibilities of all CSS positions, would be very beneficial to PACAF CSS augmentees.

3. Recommend AFHRL conduct further research to develop specific scenarios that can be incorporated into HyperCard presentations such as "HQ AFLC Battle Staff Operations" and used as training vehicles. The students could be evaluated on the actions/choices they make as they progress through the presentation.

4. Recommend that AFHRL research the potential for instituting "HQ AFLC Battle Staff Operations" (and/or similar hypermedia presentations applicable to PACAF/other MAJCOMs) as a permanent part of the formal Log C^2 training programs at all Log C^2 node locations. These versions of the presentation should include the "scenario" feature recommended above.

5. Recommend AFHRL research the value of using the hypermedia presentation as a job-aiding tool during future exercises. This research would shed light on its use as a job-aiding tool during real-world contingencies. Since each application is unique to the specific Macintosh computer it is being run on, it would not tie up valuable mainframe space/communications lines, and would respond to each user's demands in real time with no delays/preemptions, etc. Also, its uniqueness and ready access to each user facilitates its use as a personal notebook, similar to the Crisis Notebook/Battle Staff Activity Tracking (CN/BSAT) feature of the Battle Staff Management System (BSMS), only the HyperCard version would be quicker and more user-friendly.

6. Recommend AFHRL research the value of using the hypermedia format to provide training for specific systems such as the Joint Operational Planning System/Joint Operational Planning and Execution System (JOS/JOPES), Contingency Operation/Mobility Planning and Execution System (COMPES), Weapon Systen. Management Information System (WSMIS), etc. This is another area where current training methods and/or training opportunities were considered inadequate by battle staff personnel.

7. To facilitate its use as both a MAJCOM training and an AFHRL research vehicle, recommend AFHRL incorporate the following modifications to the hypermedia document delivered as a result of this study:

a. Incorporate features to automate training records, i.e., automatically record each training session and the amount of time each student spends on each card. Analysis of this research data will identify which areas caused the most concern, which areas require additional training, etc.

b. Provide pop-up scratch pad/critique forms that allow the user/student to comment, evaluate, and/or provide other useful feedback while using the system. This same feature would facilitate its use as a job-aiding tool during exercises, contingencies, and wartime.

c. Incorporate sound/color enhancements.

d. Simplify authoring instructions so that decision makers could readily modify their personal and/or command version. This would facilitate, for example, changes that a BSD might make immediately after attending one of the combat logistics/logistics executive courses mentioned in Appendix E.

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LIST OF ABBREVIATIONS

AFHRL	-	Air Force Human Resources Laboratory
AFHRL/LR	-	AFHRL/Logistics & Human Factors Division
AFIT	-	Air Force Institute of Technology
AFLC	-	Air Force Logistics Command
AFLC/LOC/XOO	-	AFLC/Logistics Operations Center/Command and Control Division
AFLCR	-	Air Force Logistics Command Regulation
AFSC	-	Air Force Specialty Code
AMREP	-	Aircraft and Missile Maintenance Production-Compression Report
AUTODIN	-	Automatic Digital Network
BSD	-	Battle Staff Director
BSMS	-	Battle Staff Management System
C^2	-	Command and Control
CME	-	Cognitive Map Elicitor
CN/BSAT	-	Crisis Notebook/Battle Staff Activity Tracking
CODAT	-	Contingency Operations Deployment Action Team
COMPES	-	Contingency Operations and Mobility Planning and Execution System
CSS	-	Contingency Support System
DCAPS	-	Data Collection and Processing System
DEFCON	-	Defense Condition
GAO	-	Group Actions Officer
GOMS	-	Goals, Operators, Methods, and Selection Rules
HCI	-	Human-Computer Interface
HQ AFLC	-	Headquarters Air Force Logistics Command
Hq USAF/LEXX	-	Headquarters U.S. Air Force/Logistics Plans Division
JOPES	-	Joint Operational Planning and Execution System
JOPS	-	Joint Operational Planning System
Log C^2	-	Logistics Command and Control
MPRC	-	Manpower and Personnel Readiness Center
PACAF	-	Pacific Air Force
PACCITS	-	PACAF Command and Control Information and Training System
PAT	-	Process Action Team
PIDEM	-	Positional Interaction Data Entry Module

LIST OF ABBREVIATIONS (Cont.)

RAP	-	Remedial Action Project
RG	-	Report Generator
SAO	-	Special Action Officer
SEI	-	Systems Exploration, Inc. or Special Experience Identifiers
SM	-	System Manager
SME	-	Subject Matter Expert
STU	-	Secure Telephone Unit
TAE	-	Task Analysis Editor
WSMIS	-	Weapon System Management Information System
WWMCCS	-	World-Wide Military Command and Control System

APPENDIX A: TRAINING QUESTIONNAIRE

LOGISTICS C2 TRAINING QUESTIONNAIRE

1. Code Number: _____
2. AFSC/Civilian Job Series (primary/control/secondary): ___/___/___
3. Special Experience Identifiers (SEIs): _____
4. Grade: _____
5. What is your current Battle Staff position?: _____
6. How long have you been assigned to this position (in months)?: _____
6a. How many exercises have you participated in (in this capacity)?: _____
6b. How many actual contingencies have you participated in (in this capacity)?: _____
7. How long do you expect to remain assigned to this position (in months)?: _____
7a. What is your total logistics C2 experience (in months)?: _____
7b. Provide a brief description of this experience (position/location/duration):

_____

_____

_____

8. What skills are required to perform the functions of this position?: _____

_____

_____

_____

_____

_____

8a. Are different skills needed for exercises/contingencies/wartime? If so, please explain:

_____

_____

_____

_____

_____

9. Did you have formal training for your Battle Staff position?: ___ Yes ___ No
If yes, describe:

_____

_____

_____

_____

_____

LOGISTICS C2 TRAINING QUESTIONNAIRE (Cont.)

10. Did you receive on-the-job training? Where? Please describe this training:

11a. Describe specific shortcomings of training for your position in terms of content:

11b. Describe specific shortcomings of training for your position in terms of methods:

12a. Describe ideal training for your position in terms of content:

12b. Describe ideal training for your position in terms of method:

LOGISTICS C2 TRAINING QUESTIONNAIRE (Cont.)

For questions 13-21, use the following response scale. Please circle your answer.

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

13. Your routine peacetime (day-to-day) duties and your duties during major exercises are identical:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

14. Your duties during major exercises are identical to the duties you expect during wartime:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

15a. The formal training you received prepared you adequately for major exercises:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

15b. The formal training you received prepared you adequately for your wartime assignment:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

LOGISTICS C2 TRAINING QUESTIONNAIRE (Cont.)

16a. The OJT you received prepared you adequately for your routine peacetime duties:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

16b. The OJT you received prepared you adequately for your participation in major exercises:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

16c. The OJT you received prepared you adequately for your wartime assignment:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

17. You acquired most job skills on your own initiative rather than through a systematic training program:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

18a. You are, in your own perception, fully qualified to participate in major exercises:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

LOGISTICS C2 TRAINING QUESTIONNAIRE (Cont.)

18b. You are, in your own perception, fully qualified to assume your wartime duties:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

19. You know exactly what is expected of you during wartime:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

20a. As far as you are concerned, the job you have to do is clearly defined for major exercises:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

20b. As far as you are concerned, the job you have to do is clearly defined for wartime:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

21a. The duties, functions, and tasks you have to perform are well-documented for major exercises:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

LOGISTICS C2 TRAINING QUESTIONNAIRE (Cont.)

21b. The duties, functions, and tasks you have to perform are well-documented for wartime:

1 Strongly Disagree
2 Disagree
3 Agree
4 Strongly Agree

22. What formal performance criteria and evaluation procedures exist for your position:

_____
_____
_____
_____
_____

23a. Are these criteria realistic?: _____ Yes _____ No

23b. If no, explain:

_____
_____
_____
_____
_____

24. How do you define good performance for your position?:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

LOGISTICS C2 TRAINING QUESTIONNAIRE (Cont.)

25. List any document (regulation, SOP, etc.) which describes your wartime job:

26. Please provide any additional comments you feel may be useful to the analysis:

APPENDIX B: TRAINING QUESTIONNAIRE RESPONSES

RESPONSES

2. AFSC

A. 6616, 6616, 1525
B. 0046
C. 6616
D. GS 301 - 12
E. 73270
F. GM 346 - 15 /6616
G. GS 2010 - 11
H. GS-346-12

3. SEI

A. NONE
B. NONE
C. NONE
D. NONE
E. NONE
F. NONE
G. NONE
H. NONE

4. GRADE

A. O-4
B. O-5
C. O-5
D. GS-12
E. E-6 (SSGT)
F. GM-15
G. GS-11 (CAPT)
H. GS-12

5. BATTLE STAFF POSITION

A. SAO
B. BSD
C. LOC DIR, FSD (SD) REPRESENTATIVE
D. MA STAFF MBR (ALSO PLANNER & EXERCISE CONTROLLER)
E. MPRC (MEMBER)
F. BSD
G. SSD
H. LOC GROUP ACTION OFFICER (GAO)

6. EXPERIENCE IN ASSIGNED C2 POSITION (IN MONTHS)

A. 20
B. 12
C. 12
D. 60
E. 24
F. 36

G. 8
H. BLANK

6a. HOW MANY EXERCISES IN THIS CAPACITY

A. 2

B. 2

C. 2 (HAS PARTICIPATED IN 5-6 EXERCISES TOTAL, I.E., 3-4 IN SOME OTHER CAPACITY)

D. APPROX 8

E. 2 (MAJOR JCS)

F. 3

G. 1

H. 2

6b. HOW MANY ACTUAL CONTINGENCIES (IN THIS CAPACITY)

A. 0

B. 2

C. 0

D. 0

E. 3 (NOTE: "real world" activity exceeds exercise activity over the same time period)

F. 2

G. 0

H. 0

7. HOW LONG DO YOU EXPECT TO REMAIN IN THIS POSITION (IN MONTHS)

A. 0

B. 0

C. INDEFINITELY (RESERVIST)

D. 60

E. 24

F. INDEFINITELY (CIVIL SERVICE)

G. DON'T KNOW

H. INDEFINITELY (Permanently while assigned to my LOC directorate)

7a. TOTAL LOGISTICS C2 EXPERIENCE (IN MONTHS)

A. 1/2 (ONE HALF)

B. 84 (36 here plus 48 in Europe in a Wing Operations Center and as an observer on the IG team.)

C. 48

D. 60

E. 24

F. 126

G. 8

H. 4

7b. DESCRIBE C2 EXPERIENCE

A. Night-time SAO during 2 exercises only at WPAFB

B. 2 years in a Wing Operations Center (at Zweibrucken GE); 2 years on a IG team in Europe which involved evaluating Wing responses to/participation in exercises; and 3 years at Hq AFLC.

C. Logistics Staff Officer - exercise operations - War Planning - COP/SRR

D. AFLC/MA Representative - MA War Planner, Exercise Controller [Trusted Agent], Project Officer

E. Member, HQ AFLC MPRC [24 month period]

F. Served as Chief, C2 Systems Division in LOC and 7 mos as Deputy Director. Prior to that, responsible for WWMCCS SON and related program plan development.

G. I worked as SSD during the last exercise. I filled the position for 10 days. I worked on the day shift and the night shift.

H. Have worked two exercises, including prepartaion for and critiquing afterwards.

8. WHAT SKILLS ARE REQUIRED FOR THIS POSITION

A. A broad knowledge of logistics functions and command operations.

B. 1. Knowledge of how AFLC functions - what do the ALCs and HQ staff do?
2. Know how the LOC FSDs (Force Structure Directorates) are structured - know who is responsible (organization) for the F-15, B-52, vehicles, fuel, etc.

C. Knowledge of logistics processes/knowledge of planning processes

D. Functional knowledge is the main requisite. Common sense and sound judgement are most helpful.

E. Expertise in all functions of Personnel; emphasis on readiness processing; personnel accountability, classified data systems maintenance and modification

F. - Broad logistics experience/understanding of the interrelationships across logistics disciplines
- In-depth understanding of regional/war and contingency planning processes and relate[d] emergency action procedures
- Good understanding/knowledge of computer/communication systems capability

G. Organizational, administrative, supervisory

H. Knowledge of structure and organization of battle staff; organizations skills; common sense; knowledge of what the LOC and AFLC do (general)

8a. ARE DIFFERENT SKILLS NEEDED FOR EXERCISES/CONTINGENCIES/WARTIME

A. Added to the above, a knowledge of the administrative procedures used during exercises.

B. Different skills are needed for those positions that are peculiar to Battle Staff operations, e.g., BSD, SAO, LOC GAO, Message "Router", etc. Those positions that are merely an extension of their normal duty, TL, SD, MA, etc, do not need additional skills. People who are tasked to work in the Battle Staff Information/Plans Center from XOXA, for example, need training.

C. In exercises, people playing in B.S. positions need a wider breadth of knowledge. For contingencies/wartime they would have to know their own specialty or they would <u>not</u> be playing on the B.S.(for GS 12-13-14).

D. No

E. No. Peacetime mission closely mirrors wartime requirement because of the nature of the HQ AFLC/DPXX mission.

F. Yes - Real world contingencies seldom use the E A [Emergency Action] system for notification - Start at low level of intensity/close-hold and spiral up - Exercises lack realism because real world "logistics" systems can not be exercised ex [for example] MILSTRIP.

G. No

H. No. These are the skills needed for exercises.

9. DID YOU HAVE FORMAL TRAINING FOR YOUR BATTLE STAFF POSITION

A. NO

B. NO

C. YES DESCRIPTION: Admin procedures/communications procedures. Listings of people and useful references to be used in B.S. positions.

D. NO (see 11b)

E. NO

F. YES DESCRIPTION: Only exercise peculiar - staffing, floor layout, admin procedures, scenario build up, etc. - NO functional training is available. Did have related crisis management training at Hurlburt.

G. No

H. Yes (Changed to a qualified "NO" - No formal training from a general source for all battle staff positions - See description below)

DESCRIPTION: 1st exercise (1989) - Meeting, hosted by LOC/AT to provide guidance for those individuals staffing the Group Action Officer position

2nd exercise (1989) - Meeting hosted by LOC/AT/SD to provide guidance for those staffing LOC positions

10. DID YOU RECEIVE ON-THE-JOB TRAINING

A. YES - In-place during the exercise.

B. NO - Except, the BSD provided training as we exercised.

C. YES- in filling the various B.S. positions such as SAO, GAO, FSD REP, LOC Director & BS Director.

D. Yes. Here at AFLC Hqs - presented primarily by my predecessor. My level of understanding of B.S. duties/responsibilities was achieve[d] through enthusiasm and self-initiative.

E. Yes, in the middle of WINTEX/CIMEX 89 and the preceding weeks. OJT was basic familiarization with terms and forms prescribed for use.

F. Basically no - My initial experience came as an exercise planner - This provided opportunity to observe various management styles/personalities.

G. [No] I had job descriptions of the people working in the SSU. A job description of the SSU and the SSD. I received an inbrief from the day shift SSD (about 10 min) and I was on my own.

H. No.

11a. DESCRIBE SHORTCOMINGS OF TRAINING IN TERMS OF CONTENT

A. NO COMMENT/BLANK

B. NO COMMENT/BLANK

C. Needed up-to date listing of phone numbers, people, resource lists, weapon system/requirement listings and other DCS functions & responsibilities listing.

D. N/A

E. The mission of the MPRC is so dynamic that the learning curve is very steep. Experience has proven to be the best teacher.

F. N/A - There isn't any.

G. Having never been in an exercise before, it would have been beneficial to understand how all players (i.e., Info Center, MPRC, CODAT, Command Post) fit together. No references to any Regs, OIs..

H. No training provided on the overall working of the BS and the other positions. One did not know going in - who one dealt with for specific problems or many of the general procedures of the BS.

11b. DESCRIBE SHORTCOMINGS OF TRAINING IN TERMS OF METHODS

A. NO COMMENT/BLANK

B. NO COMMENT/BLANK

C. Needed on-hand training for the telephone and other communication tools. Need walk-thru in handling MSELS.

D. Gaining a broad understanding of the MA functional area was the most challenging. Generic C2 duties/responsibilities were provided in short classes of training sessions, i.e., BSMS, WWMCCS, Security, Combat Logisitcs Course, etc.

E. Methods change as data systems become available.

F. N/A

G. Only method was word of mouth and the job descriptions of the SSU positions

H. Training did not cover many of the specifics needed to perform job well - such as overview of the battle staff, how the BS is organized, how to work secure phones, what to do at DEFCON changes.

12a. DESCRIBE IDEAL TRAINING FOR YOUR POSITION IN TERMS OF CONTENT

A. NO COMMENT/BLANK

B. 1. General overview of AFLC/ALC functions
2. DEFCON procedures
3. Exercise scenario
4. Key POCs - Air Staff, MAJCOMs, etc.
5. Security

C. - Planning process - where we fit in Command Chain
- Understanding of functions AF/AFLC (HQ)/ALC etc. (who does what)
- MSELS (For exercise play) walk-thru - how to handle/use
- Admin procedures
- Acronyms/symbols

D. A good mix of generic C2 policies/procedures and functionally specific training.

E. More frequent exercises would enable experience levels to increase.

F. Possibly a combination of formal AFIT training in contingency management. - MAC teaches an SCI level course at Hurlburt in crisis management - Combine with tour as SAO supplemented by opportunity to serve as LLO [CCO?] to AFCOS and tour through ALCs/MAJCOM LRCs during exercises

G. Comprehensive description of the function of the SSU, how it fits into the Battle Staff and interrelates to other areas (i.e., Info Center, Exercise Control) - Job descriptions of positions in the SSU - What the WIN, BSMS, WWMCCS, Message Center are, - kinds of messages from each. Overview of the software programs used in the SSU. Any Regs that have anything to do with the job and/or Battle Staff as a whole.

H. Overview of BS and responsibilities of each position in the BS; BS admin procedures, exercise scenario, security procedures, forms needed

12b. DESCRIBE IDEAL TRAINING IN TERMS OF METHOD

A. NO COMMENT/BLANK

B. Classroom - lecture w/ briefing slides OR computer training!!

C. Briefing - Planning Process, functions of players

Hands-on sample MSEL, use of phones

D. A combination of OJT and formal.

E. Continued awareness of changes/replacements of Battle Staff data systems.

F. Believe experience in various capacities is best teacher.

G. Have a mock SSU - all players in for training, have examples of different types of functions that will have to be performed. Map with location of all pick up points and distribution points for the runners. Book with instructions, job descriptions, terminology, applicable regs, OIs..

H. Either briefings prior to start of exercise and/or some computerized tutorials.

13. ROUTINE (DAY-TO-DAY) AND EXERCISE DUTIES ARE IDENTICAL

A. 1. STRONGLY DISAGREE

B. 3. AGREE

C. 2. DISAGREE

D. 1. STRONGLY DISAGREE

E. 4. STRONGLY AGREE

F. 2. DISAGREE

G. 1. STRONGLY DISAGREE

H. 2. DISAGREE

AVG. 2.0 DISAGREE

14. DUTIES DURING EXERCISES ARE IDENTICAL TO EXPECTED WARTIME DUTIES

A. 1. STRONGLY DISAGREE

B. 3. AGREE

C. 3. AGREE

D. 3. AGREE

E. 4. STRONGLY AGREE

F. 3. AGREE

G. 3. AGREE

H. 2. DISAGREE (My BS position may not be needed or might be filled by someone else - this has not been determined yet)

AVG 2.75 AGREE

15a. FORMAL TRAINING YOU RECEIVED PREPARED YOU ADEQUATELY FOR EXERCISES

A. 1. STRONGLY DISAGREE

B. 3. AGREE

C. 2. DISAGREE

D. 3. AGREE

E. 3. AGREE

F. 1. STRONGLY DISAGREE

G. 1. STRONGLY DISAGREE (No formal training)

H. 2. DISAGREE (Only by { adding and developing ?} training for LOC personnel. Formal training provided by LOC/XO was very inadequate)

AVG 2.0 DISAGREE

15b. FORMAL TRAINING YOU RECEIVED PREPARED YOU ADEQUATELY FOR WARTIME

A. 1. STRONGLY DISAGREE

B. 2. DISAGREE

C. 2. DISAGREE

D. 2. DISAGREE

E. 3. AGREE

F. 1. STRONGLY DISAGREE

G. 1. STRONGLY DISAGREE (No formal training)

H. 1. STRONGLY DISAGREE

AVG 1.63 DISAGREE

16a. OJT YOU RECEIVED PREPARED YOU ADEQUATELY FOR YOUR PEACETIME DUTY

A. 1. STRONGLY DISAGREE (NOTE: There is no correlation between peacetime job and SAO duty.)

B. 3. AGREE

C. 2. DISAGREE

D. 3. AGREE

E. 3. AGREE

F. 3. AGREE

G. 3. AGREE

H. 2. DISAGREE (Peacetime job is not identical to BS position)

AVG: 2.5 UNDECIDED

16b. OJT YOU RECEIVED PREPARED YOU ADEQUATELY FOR EXERCISE DUTY

A. 3. AGREE

B. 2. DISAGREE

C. 4. STRONGLY AGREE

D. 3. AGREE

E. 3. AGREE

F. 3. AGREE

G. 3. AGREE

H. 2. DISAGREE

AVG: 2.9 AGREE

16c. OJT YOU RECEIVED PREPARED YOU ADEQUATELY FOR WARTIME

A. 1. STRONGLY DISAGREE

B. 2. DISAGREE

C. 3. AGREE

D. 3. AGREE

E. 3. AGREE

A. 2. DISAGREE

B. 3. AGREE

C. 3. AGREE

D. 4. STRONGLY AGREE

E. 4. STRONGLY AGREE

F. 4. STRONGLY AGREE

G. 3. AGREE

H. 4 STRONGLY AGREE

AVG: 3.38 AGREE

19. YOU KNOW EXACTLY WHAT WILL BE EXPECTED OF YOU DURING WARTIME

A. 2. DISAGREE

B. 3. AGREE

C. 2. DISAGREE

D. 4. STRONGLY AGREE

E. 4. STRONGLY AGREE

F. 4. STRONGLY AGREE

G. 3. AGREE

H. 1 STRONGLY DISAGREE NOTE AGREE IF my BS position is used during wartime Do not know what my peacetime position would do in wartime.

AVG: 3.25 AGREE NOTE: The "H" response was counted as a "3" since intent of the question was directed to BS position.

20a. YOUR JOB DURING EXERCISES IS CLEARLY DEFINED

A. 2. DISAGREE

B. 3. AGREE

C. 3. AGREE

D. 3. AGREE

E. 4. STRONGLY AGREE

F. 3. AGREE

G. 3. AGREE

H. 3. AGREE

AVG: 3.0 AGREE

20b. YOUR WARTIME JOB IS CLEARLY DEFINED

A. 2. DISAGREE

B. 3. AGREE

C. 3. AGREE

D. 3. AGREE

E. 4. STRONGLY AGREE

F. 3. AGREE

G. 3. AGREE

H. 1. STRONGLY DISAGREE

AVG: 2.75 AGREE

21a. EXERCISE DUTIES/FUNCTIONS ARE WELL DOCUMENTED

A. 2. DISAGREE

B. 2. DISAGREE

C. 3. AGREE

D. 3. AGREE

E. 3. AGREE

F. 1. STRONGLY DISAGREE

G. 2. DISAGREE

H. 3. AGREE (internal documentation)

AVG: 2.38 DISAGREE

21b. WARTIME DUTIES/FUNCTIONS ARE WELL DOCUMENTED

A. 2. DISAGREE

B. 2. DISAGREE

C. 2. DISAGREE

D. 2. DISAGREE

E. 3. AGREE

F. 1. STRONGLY DISAGREE

G. 2. DISAGREE

H. 1. STRONGLY DISAGREE

AVG: 1.88 DISAGREE

22. WHAT FORMAL PERFORMANCE CRITERIA EXIST FOR YOUR B.S. POSITION

A. NONE

B. PALACE MODE JOB DESCRIPTION OR NONE

C. Feedback session/ Officer Performance Rating (OER)

D. The critique process and post exercise analysis

E. Do the deploying forces arrive at their wartime location and do we know who they are?

F. None - Bottom line is judged by whether or not I have met the Commander's expectations

G. None that I'm aware of.

H. None

23a. ARE THESE CRITERIA REALISTIC

A. NO COMMENT/BLANK

B. YES

C. YES

D. YES

E. NO

F. YES

G. NO COMMENT/BLANK

H. NO COMMENT/BLANK

23b. IF NO, EXPLAIN

A. NO COMMENT/BLANK

B. NO COMMENT/BLANK

C. NO COMMENT/BLANK

D. NO COMMENT/BLANK

E. The forces will move regardless of our involvement. There is no inspection/evaluation system to adequately track all the functions of the MPRC as we are the only experts. Any criteria would be developed by us, for us! Not the smartest way to use your day!

F. NO COMMENT/BLANK

G. NO COMMENT/BLANK

H. NO COMMENT/BLANK

24. HOW DO YOU DEFINE GOOD PERFORMANCE FOR YOUR POSITION

A. The ability to act in the absence of the director and resolve major issues in minimal time.

B. - Managing people
- Performing in the job
- Producing new ways to do things
- Processing paperwork on time
- Managing TDY monies within budget

C. If you know where to go to for info and be able to synthesize it to perform job/answer problems, etc.

D. Accurate and timely actions

E. Being able to understand total tasking scenarios; controlling command resources; maintaining data bases/teleconferences; comprehend what is happening on other B.S. positions and relating it to the MPRC mission.

F. - I have anticipated the users needs and facilitated an appropriate and timely response.

G. Make sure the SSU operates effectively and efficiently. This means

the message traffic coming into the Battle Staff gets logged in and sent out to the correct action officer as quickly as possible. That's the most important function, next would be to make sure messages are properly logged and filed in case some one needs to see previous messages, they can be quickly located.

H. Smooth transition between shifts and changes of personnel. All positions serviced by the GAO be aware of on-going (open) actions when they check in.

25. LIST AND DOCUMENT/REGULATION WHICH DESCRIBES YOUR WARTIME JOB

A. NO COMMENT/BLANK

B. AFLCR 55-2
LOC OI 55-2
WMP-1

C. MANREQ/FORSIZE TASK Definitions
AF Form 1560 - for reservists - contains wartime job descriptions and tasks to perform - lists areas reservists need to be proficient in in order to do job.

D. AFLCR 55-2
AFR 66-3
AFR 28-46
AFR 66-8
TO 00-25-107
TO 00-25-108
AFR 55-15
AFR 55-55
AFLCR 55-305

E. AF WMP-1
Emergency Actions Book (DCS/P)
DP OI 55-1
HQ OI 55-2

F. None - We do have BSD book but it covers administrative procedures/phone lists etc. Does contain some checklist info.

G. AFLCR 55-2
Wartime Job Description in {IMA} folder

H. None

26. ADDITIONAL COMMENTS

A. NONE

B. NONE

C. Need to know:

Scope of position
Specific weapon system/process embodied in position
People/positions to go to
Resources - data systems , reg[ulations], etc. to go to in performing duties
Admin procedures - format, channels pop(?) should go thru
Understanding of planning per the Joint Staff Officer's Guide

D. Recommend a training capability be established to provide formal training to all designated Battle Staff Members. The training should include both the initial and follow-up requirements. C2 experts could provide common battle staff activities and selected functional experts could provide an overview or their functions. The combination should provide the big picture.

E. The MPRC is active prior to, during, and after exercises as well as "real world" situations. The line is blurred somewhat as to when an exercise "builds up" for MPRC as we are busy from the start. Training is a constant struggle as members depart or finish the appointed 24 month stint on the MPRC.

F. Not specifically asked.

APPENDIX C: INTERVIEW FORM

BATTLE STAFF DIRECTOR

PRIMARY DUTIES:

_____.

SUBTASKS:
(Primary Duty No./Subtask Duty No.)

_____/_____

AGENCY/IDENTITY INTERACTIONS (For each Subtask):
(Primary Duty No./Subtask Duty No.)

_____/_____

METHOD/PROCEDURE (For each Primary Duty/Subtask):
(Primary Duty No./Subtask No./Procedure No.)

_____/_____/_____

SELECTION RULE (For each Method/Procedure):
(Primary Duty No./Subtask No./Procedure No.)

_____/_____/_____

EQUIPMENT (For each Method/Procedure):
(Primary Duty No./Subtask No./Procedure No.)

_____/_____/_____

SYSTEM/DOCUMENT/USER VIEW (For each Procedure):
(Primary Duty No./Subtask No./Procedure No.)

_____/_____/_____

OPERATIONS/OPERATORS (For each Procedure):
(Primary Duty No./Subtask No./Procedure No.)

_____/_____/_____

APPENDIX D: HYPERCARD DOCUMENTATION

HYPERCARD DOCUMENTATION

The purpose of this appendix is to provide a brief description of generic HyperCard terminology and features and to show how they were used in this task. HyperCard is a method of presenting information that allows readers to interact with the document and choose their own, possibly unique, path through the presentation. The author can, of course, restrict reader options to ensure a desired sequence is followed when necessary.

The basic elements of HyperCard presentations are stacks. A HyperCard stack is a heterogeneous collection of information. Each stack in HyperCard is a separate Macintosh disk file, which appears as a HyperCard document icon in the Macintosh "Finder" presentation. Stacks are made up of cards and backgrounds. A card is one screenful of information. A background is a "holding area" where you can place elements that you want a group of cards to have in common. Each background may be shared by one, many, or all cards. The background is composed of background pictures (graphics), background fields, and background buttons. Cards and backgrounds may have fields, buttons, and graphics. Regular text is typed in fields. Buttons initiate a HyperCard action (making a connection, launching an application, starting a visual or sound effect, and so on). They are the primary navigational tool used to progress through a stack. By applying HyperTalk scripts (a collection of HyperTalk instructions associated with a HyperCard object) to stacks, cards, backgrounds, fields, and buttons, you can dictate which actions are to take place with each step through the HyperCard presentation.

We chose to enter data in fields to facilitate the handling of large amounts of data (larger than that which could fit on a single view screen at one time) and to assist the reader in finding a particular reference using the "find" command available in "fielded" data.

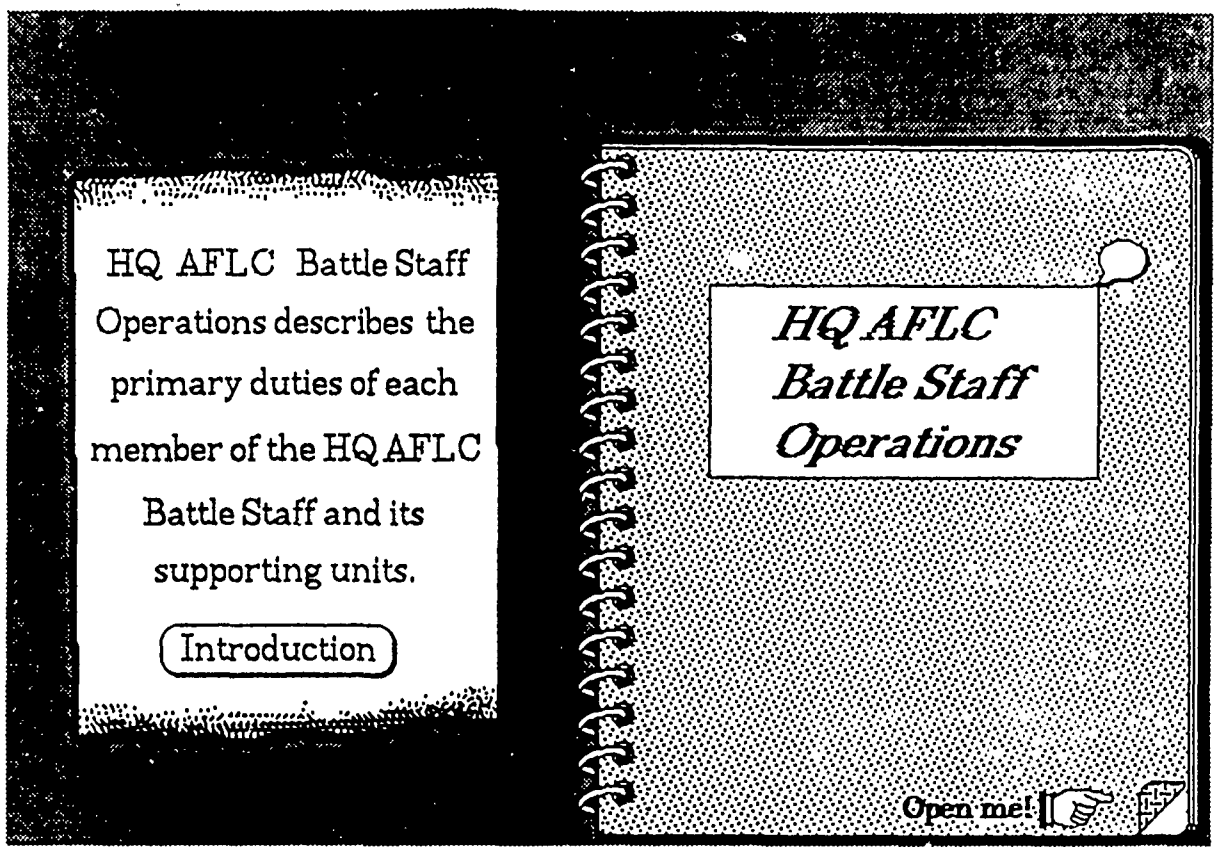
The process of building a HyperCard stack is not much different from conventional programming but may be easier to learn by a beginner. The steps used in designing a stack are:

1. Analyze the problem.
2. Define the data involved.
3. Describe the output desired.
4. Break the problem into components.
5. Sketch the backgrounds.
6. Define and implement the links (desired navigation options).
7. Write the HyperTalk scripts for each event.

8. Test, debug, and finalize functionality.
9. Finalize the backgrounds.
10. Document the HyperCard stack.

Our HyperCard stack contains a total of 155 cards and uses 15 different backgrounds. To facilitate navigation through the stack, we chose the metaphor of a book. We simply automated page turning, page marking, data searches, and data retrieval.

For illustrative purposes, we have included in this appendix the Introduction to our HyperCard product, "HQ AFLC Battle Staff Operations." This sample will demonstrate both the ease with which the reader can navigate through the stack and the amount of data available within the document. In addition, we have included the scripting for the stack, which provides an example of the HyperTalk script involved.

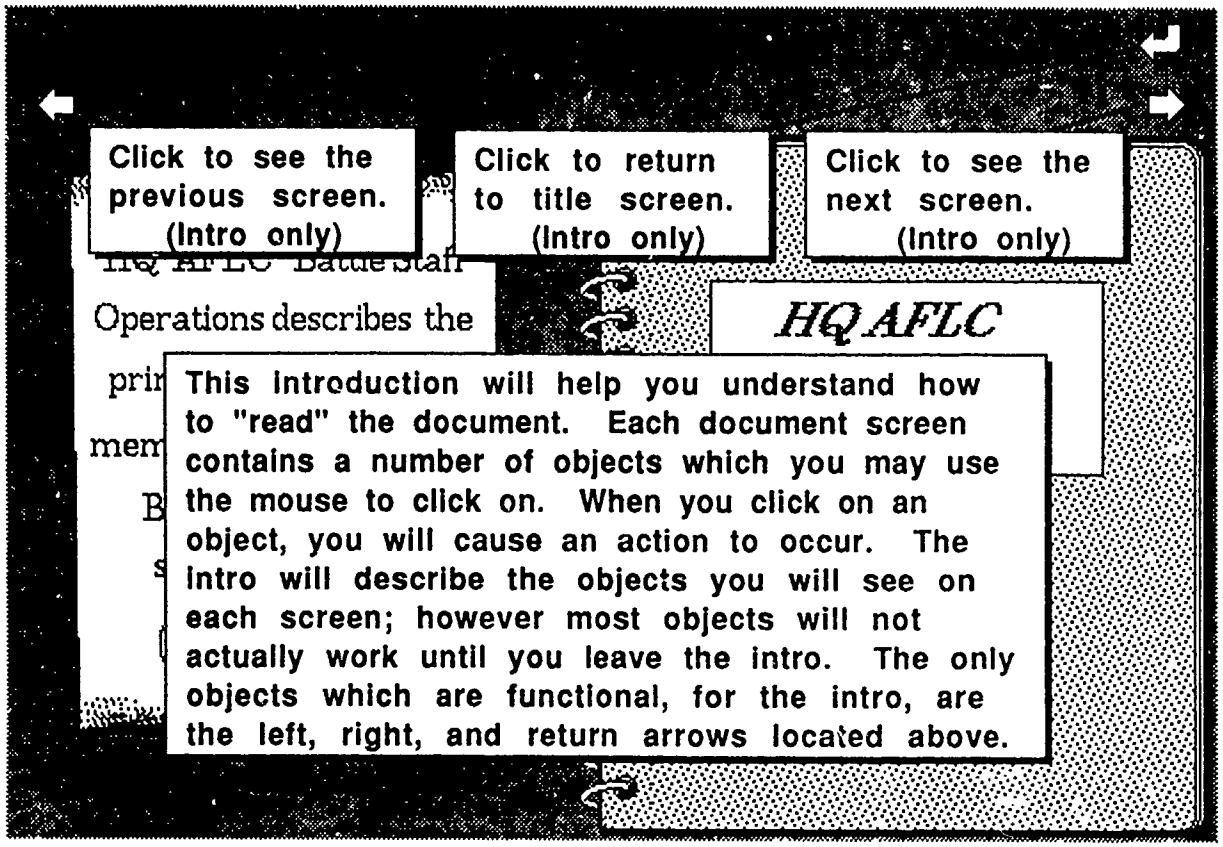

HQ AFLC Battle Staff Operations describes the primary duties of each member of the HQ AFLC Battle Staff and its supporting units.
Introduction
HQ AFLC Battle Staff Operations
Open me!

Introduction

Click here for next screen

This document is organized into chapters, a chapter for each battle staff position. Each chapter provides a description of the position and lists the primary functions of that position. Each primary function or duty (GOAL) is further delineated into secondary duties (SUB-GOALs). Each sub-goal, in turn, is related to the people/ organizations (INTERFACES), systems/documents/regulations (SYSTEM/DOC), and equipment (EQUIPMENT) that the incumbent deals with in performing the sub-goal.

HQ AFLC
Battle Staff
Operations


Click to see the previous screen. (Intro only)
Click to return to title screen. (Intro only)
Click to see the next screen. (Intro only)
Operations describes the
HQ AFLC
This introduction will help you understand how to "read" the document. Each document screen contains a number of objects which you may use the mouse to click on. When you click on an object, you will cause an action to occur. The intro will describe the objects you will see on each screen; however most objects will not actually work until you leave the intro. The only objects which are functional, for the intro, are the left, right, and return arrows located above.

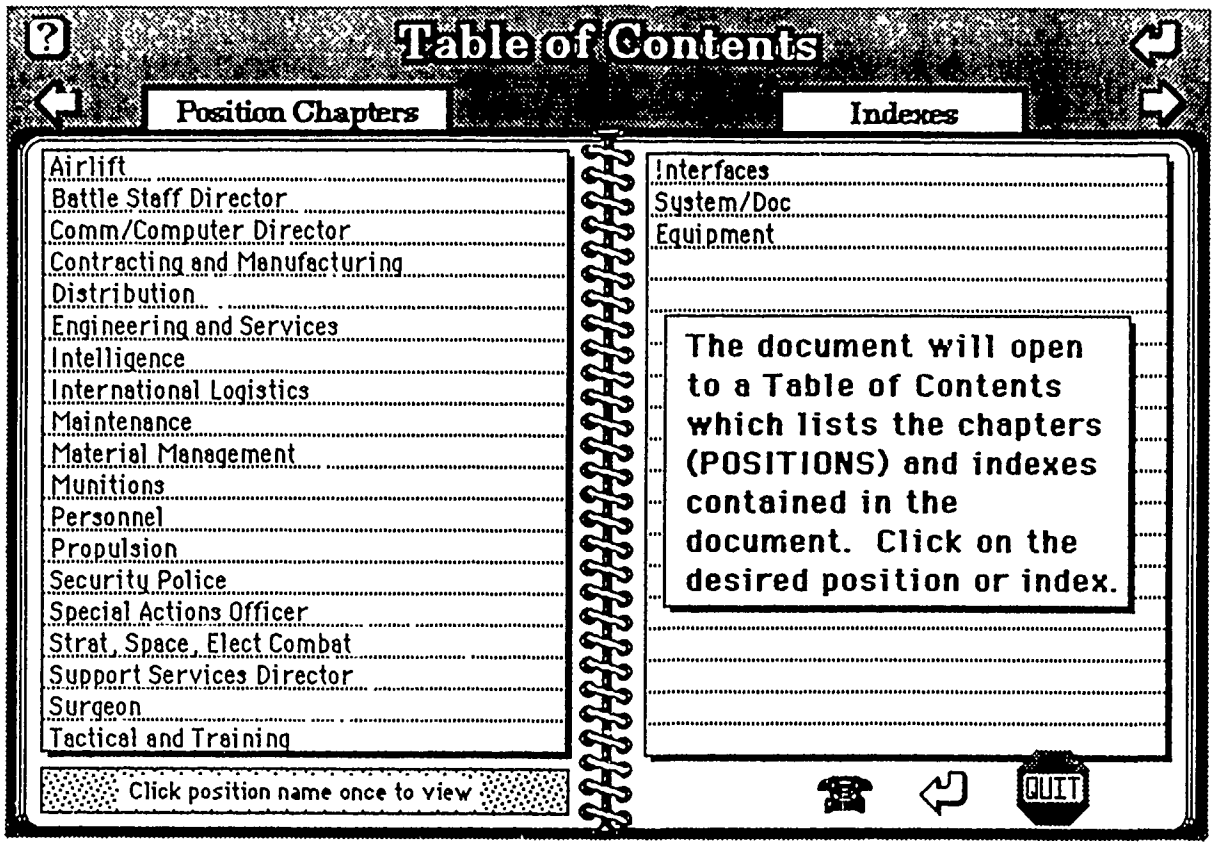
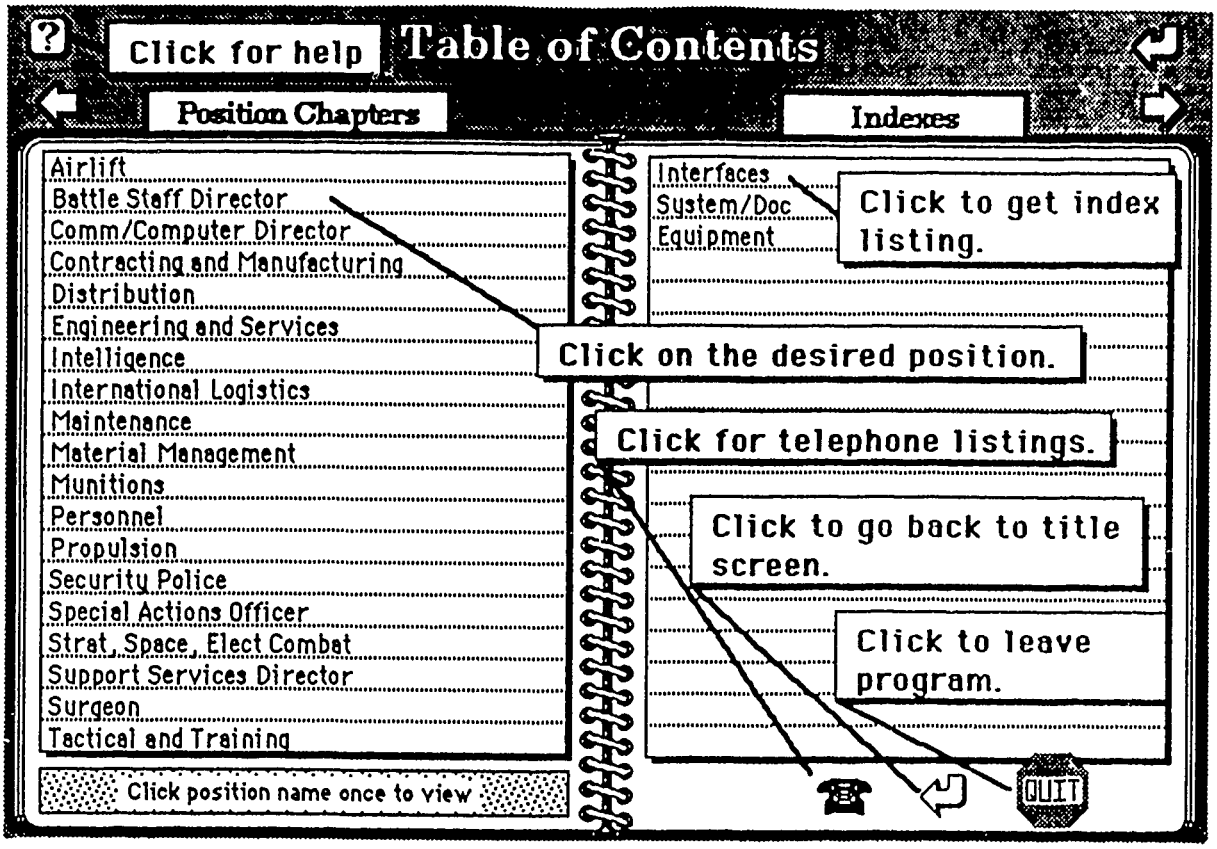


Table of Contents
Position Chapters
Indexes
Airlift
Battle Staff Director
Comm/Computer Director
Contracting and Manufacturing
Distribution
Engineering and Services
Intelligence
International Logistics
Maintenance
Material Management
Munitions
Personnel
Propulsion
Security Police
Special Actions Officer
Strat, Space, Elect Combat
Support Services Director
Surgeon
Tactical and Training
Click position name once to view
Interfaces
System/Doc
Equipment
The document will open to a Table of Contents which lists the chapters (POSITIONS) and indexes contained in the document. Click on the desired position or index.
QUIT


Click for help
Table of Contents
Position Chapters
Indexes
Airlift
Battle Staff Director
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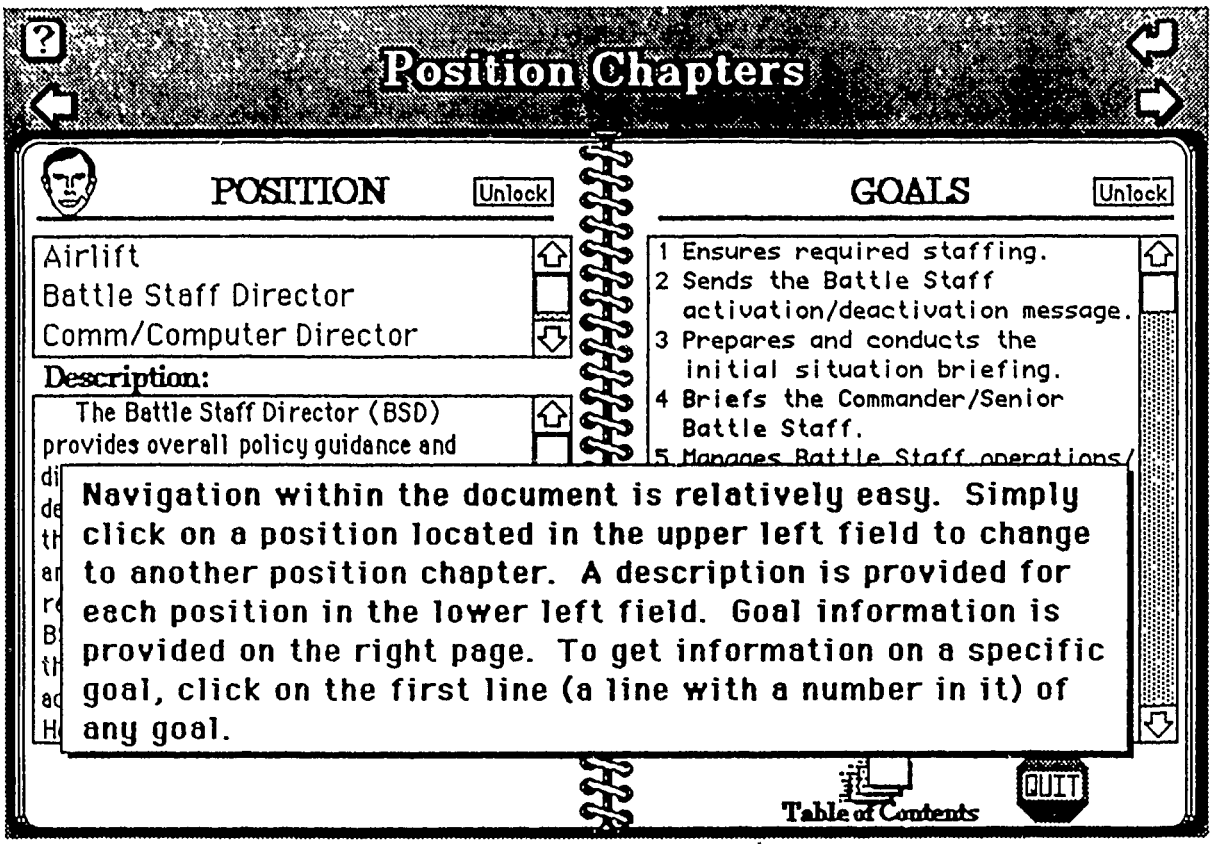
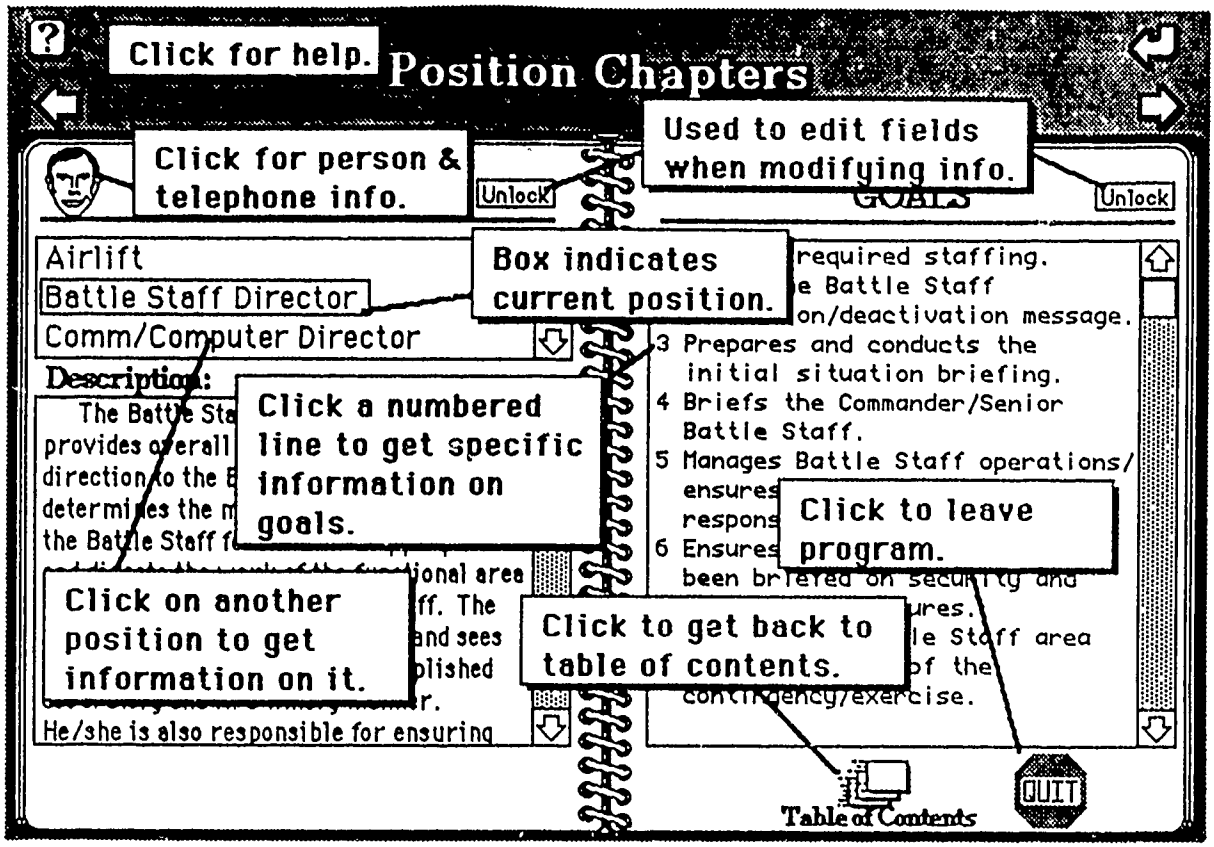
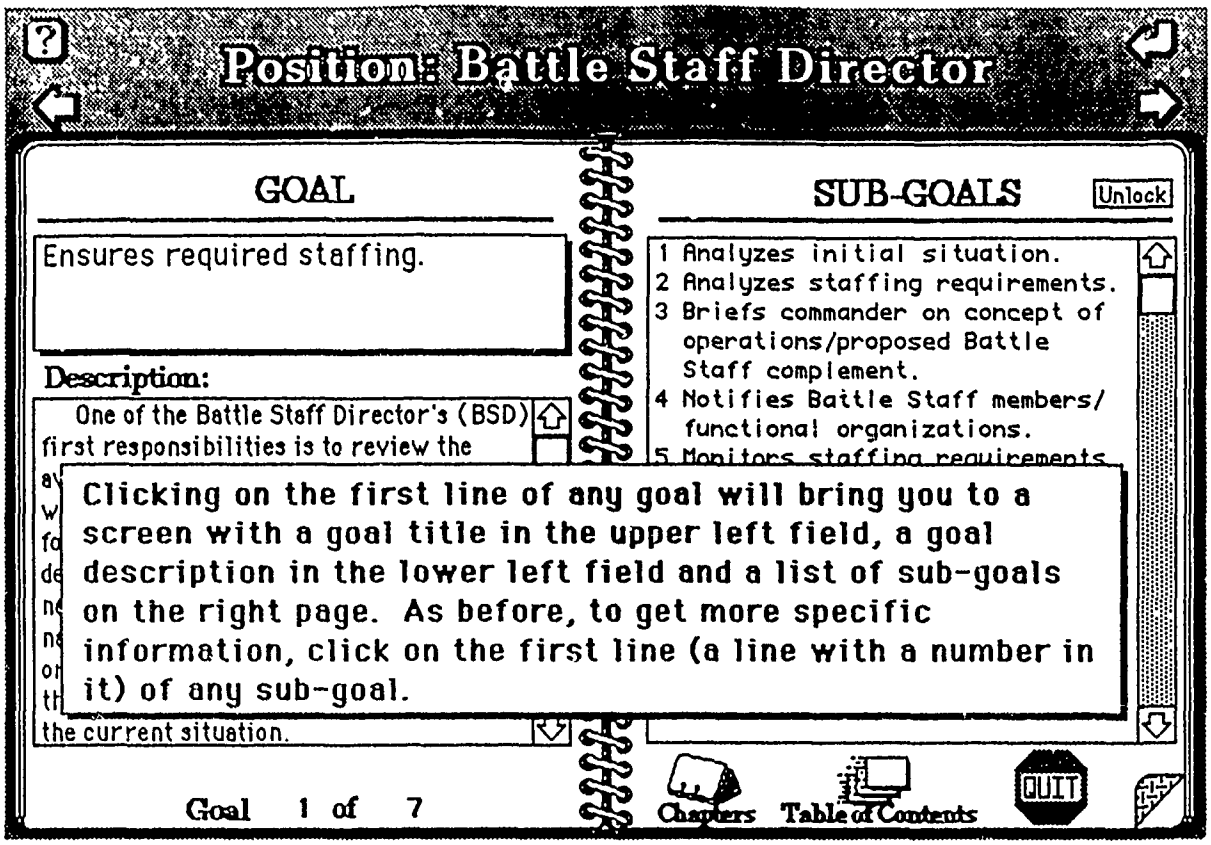
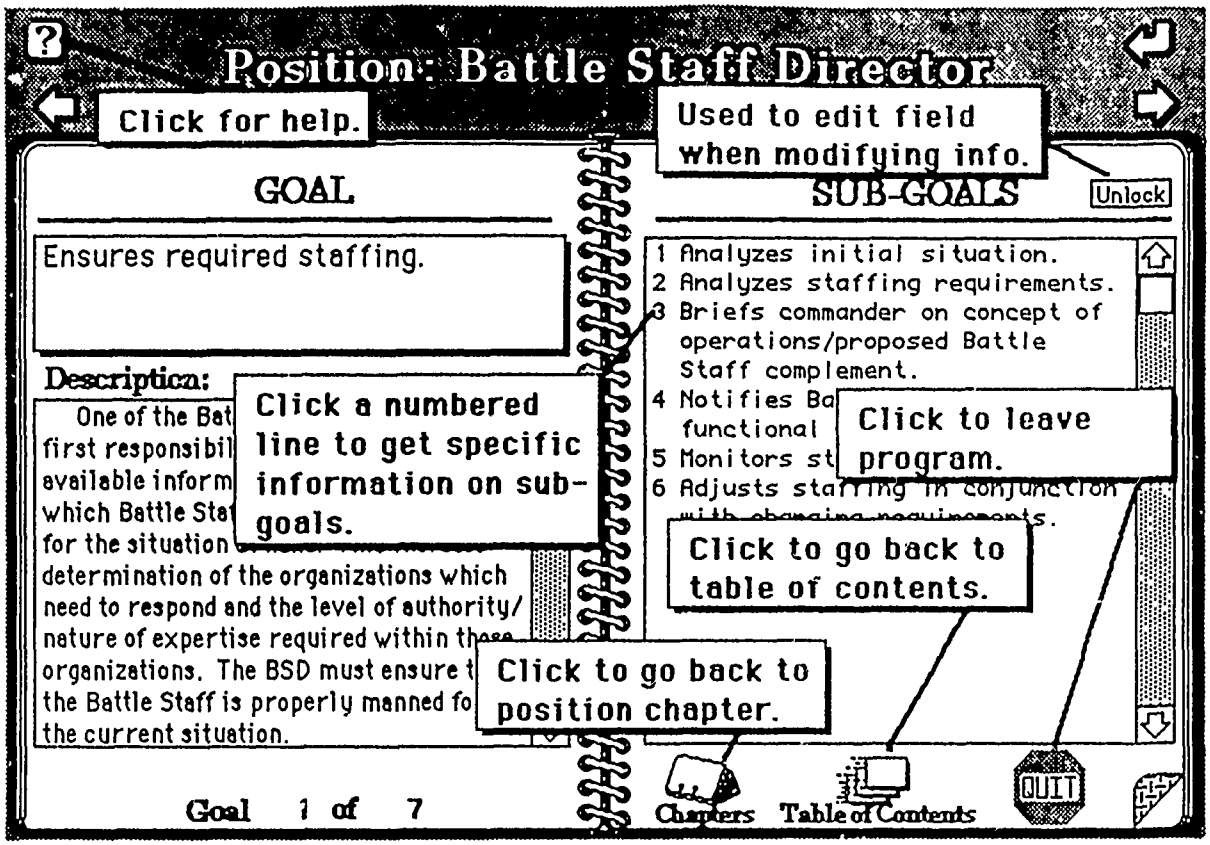
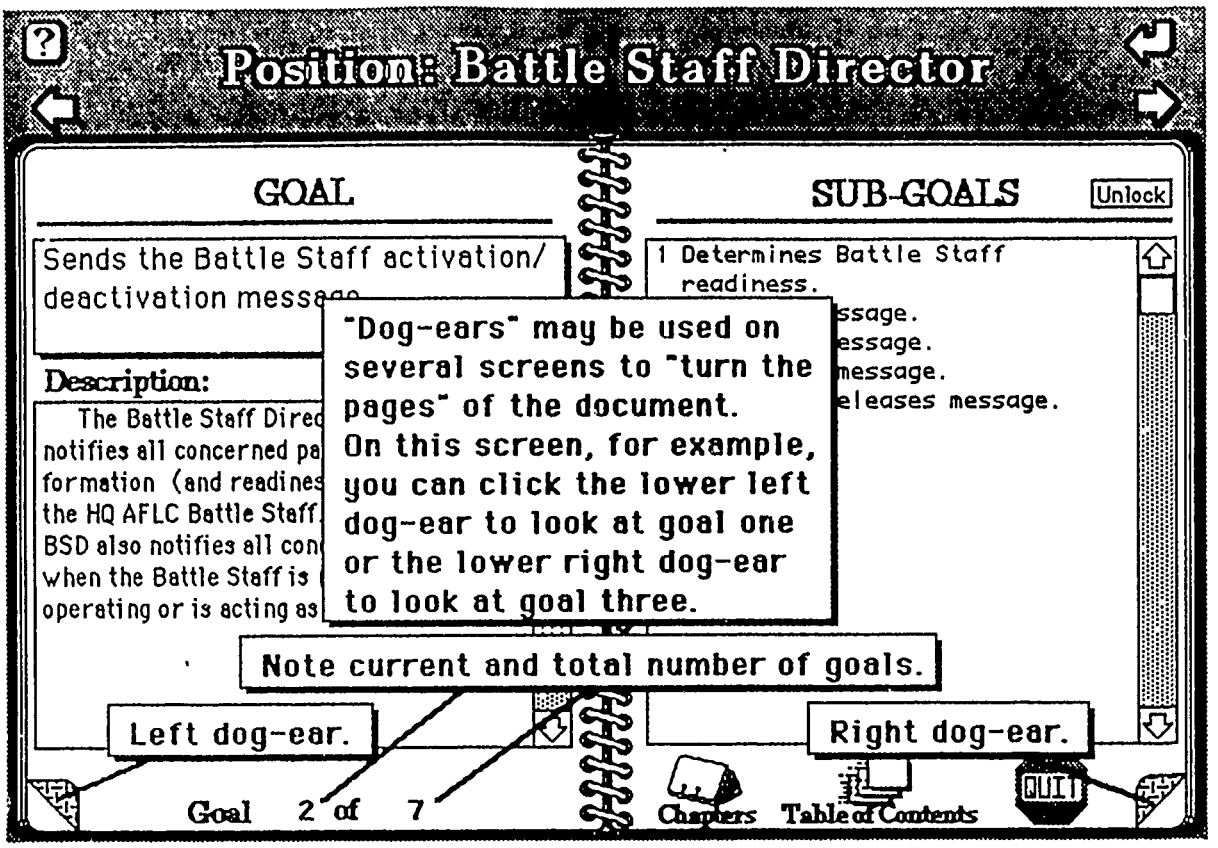
Personnel
Propulsion
Security Police
Special Actions Officer
Strat, Space, Elect Combat
Support Services Director
Surgeon
Tactical and Training
Interfaces
System/Doc
Equipment
Click to get index listing.
Click on the desired position.
Click for telephone listings.
Click to go back to title screen.
Click to leave program.
Click position name once to view
QUIT

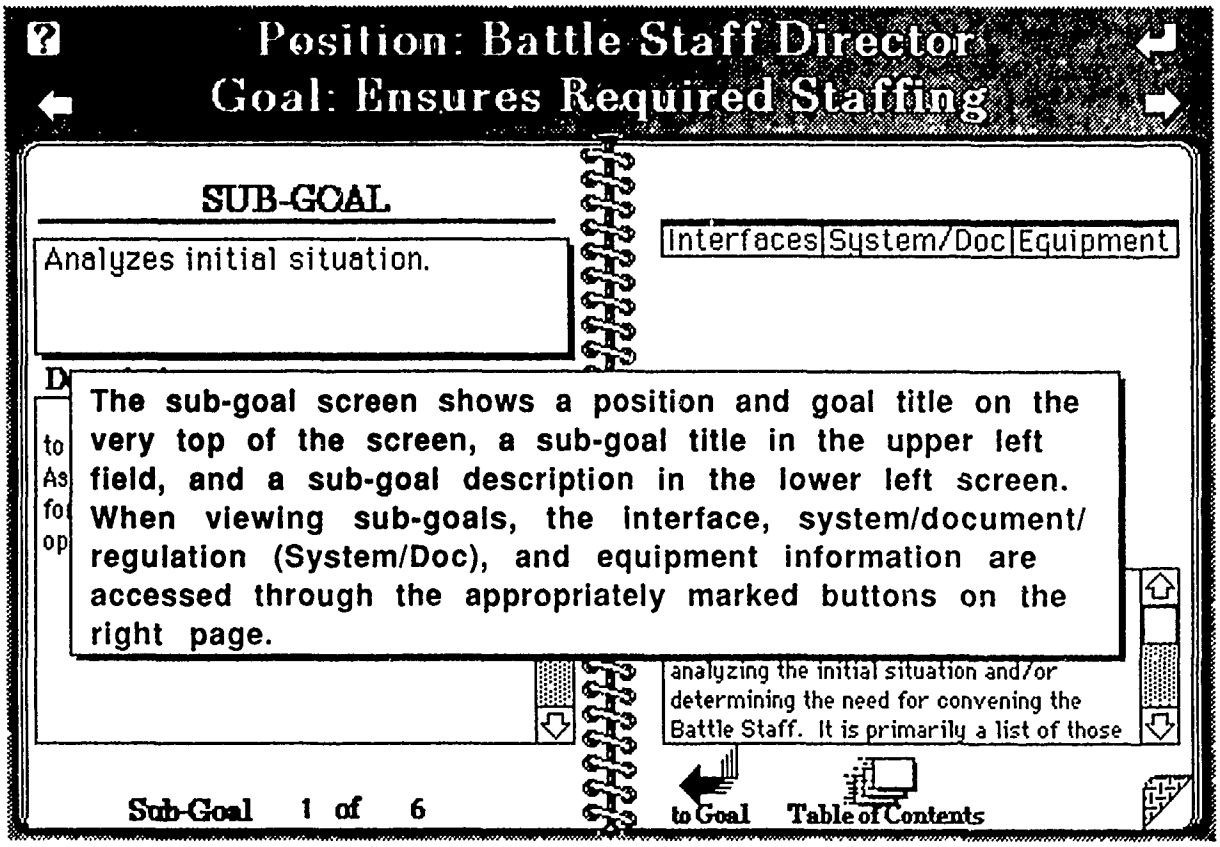

Position Chapters
POSITION
Unlock
Airlift
Battle Staff Director
Comm/Computer Director
Description:
The Battle Staff Director (BSD) provides overall policy guidance and
GOALS
Unlock
1 Ensures required staffing.
2 Sends the Battle Staff activation/deactivation message.
3 Prepares and conducts the initial situation briefing.
4 Briefs the Commander/Senior Battle Staff.
Navigation within the document is relatively easy. Simply click on a position located in the upper left field to change to another position chapter. A description is provided for each position in the lower left field. Goal information is provided on the right page. To get information on a specific goal, click on the first line (a line with a number in it) of any goal.
Table of Contents
QUIT

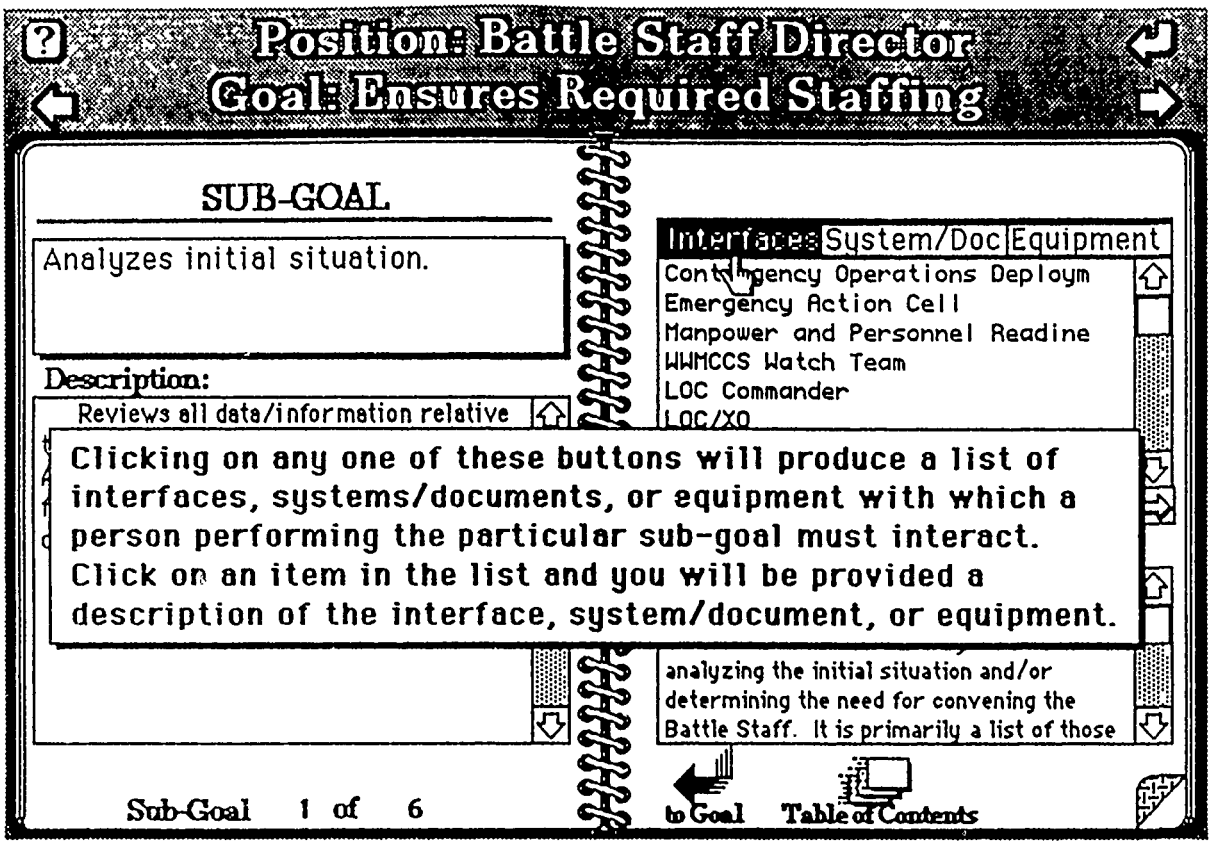

Click for help.
Position Chapters
Click for person & telephone info.
Used to edit fields when modifying info.
Unlock
Unlock
Box indicates current position.
Airlift
Battle Staff Director
Comm/Computer Director
Description:
Click a numbered line to get specific information on goals.
Click to leave program.
Click on another position to get information on it.
Click to get back to table of contents.
3 Prepares and conducts the initial situation briefing.
4 Briefs the Commander/Senior Battle Staff.
5 Manages Battle Staff operations/
6 Ensures
He/she is also responsible for ensuring
Table of Contents
QUIT

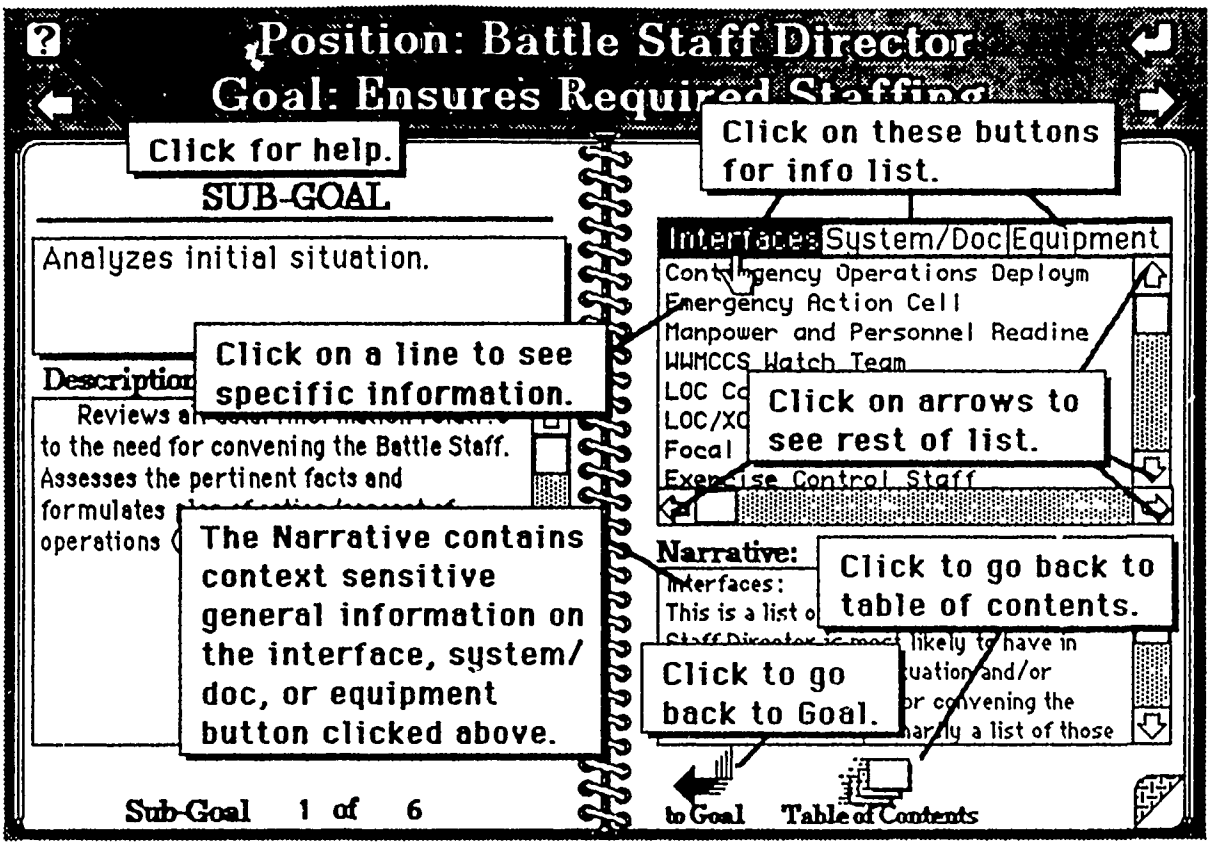

Position: Battle Staff Director
GOAL
Ensures required staffing.
Description:
One of the Battle Staff Director's (BSD) first responsibilities is to review the
the current situation.
SUB-GOALS
Unlock
1 Analyzes initial situation.
2 Analyzes staffing requirements.
3 Briefs commander on concept of operations/proposed Battle Staff complement.
4 Notifies Battle Staff members/ functional organizations.
5 Monitors staffing requirements
Clicking on the first line of any goal will bring you to a screen with a goal title in the upper left field, a goal description in the lower left field and a list of sub-goals on the right page. As before, to get more specific information, click on the first line (a line with a number in it) of any sub-goal.
Goal 1 of 7
Chapters
Table of Contents
QUIT

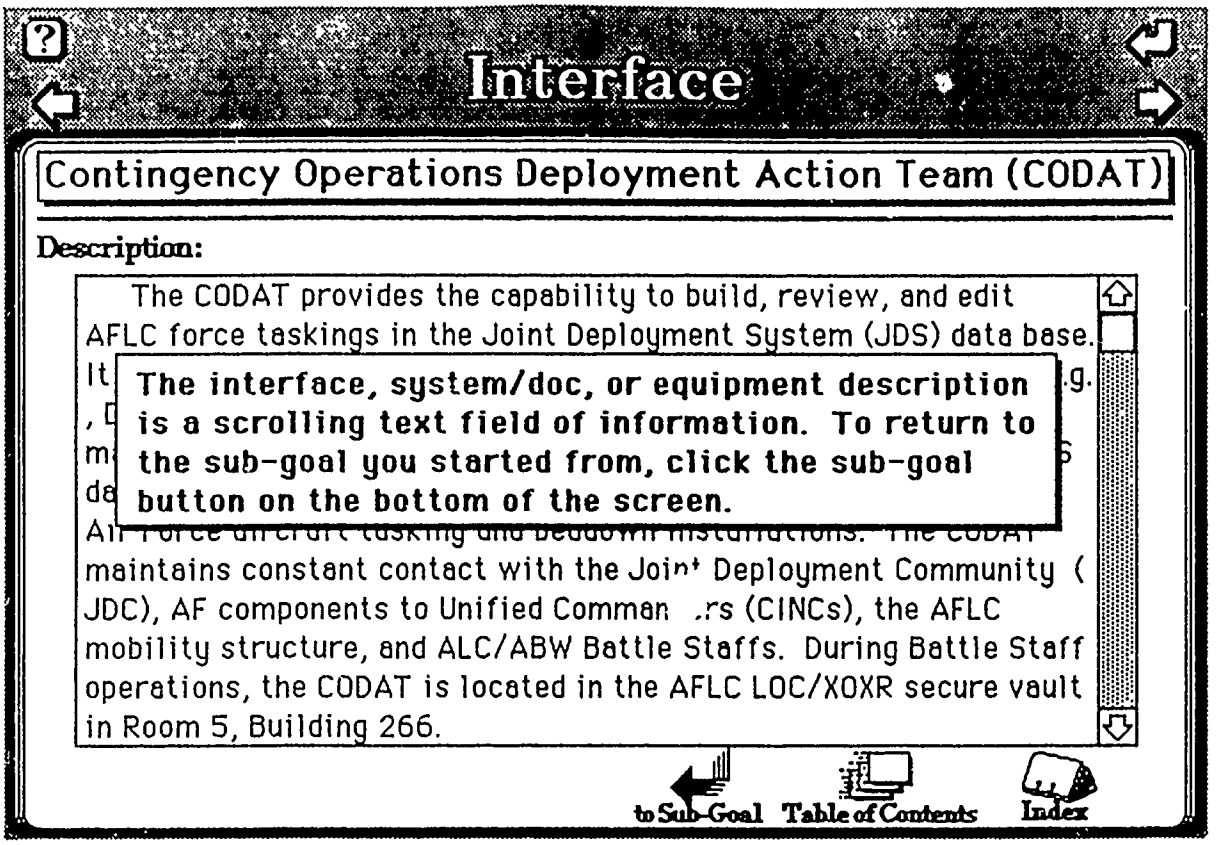

Position: Battle Staff Director
Click for help.
Used to edit field when modifying info.
GOAL
SUB-GOALS
Unlock
Ensures required staffing.
1 Analyzes initial situation.
2 Analyzes staffing requirements.
3 Briefs commander on concept of operations/proposed Battle Staff complement.
4 Notifies Ba
functional
5 Monitors st
6 Adjusts staffing in conjunction
Description:
One of the Bat
first responsibil
availabl inform
which Battle Sta
for the situation
determination of the organizations which need to respond and the level of authority/ nature of expertise required within th
organizations. The BSD must ensure t
the Battle Staff is properly manned fo
the current situation.
Click a numbered line to get specific information on sub-goals.
Click to leave program.
Click to go back to table of contents.
Click to go back to position chapter.
Goal 1 of 7
Chapters
Table of Contents
QUIT

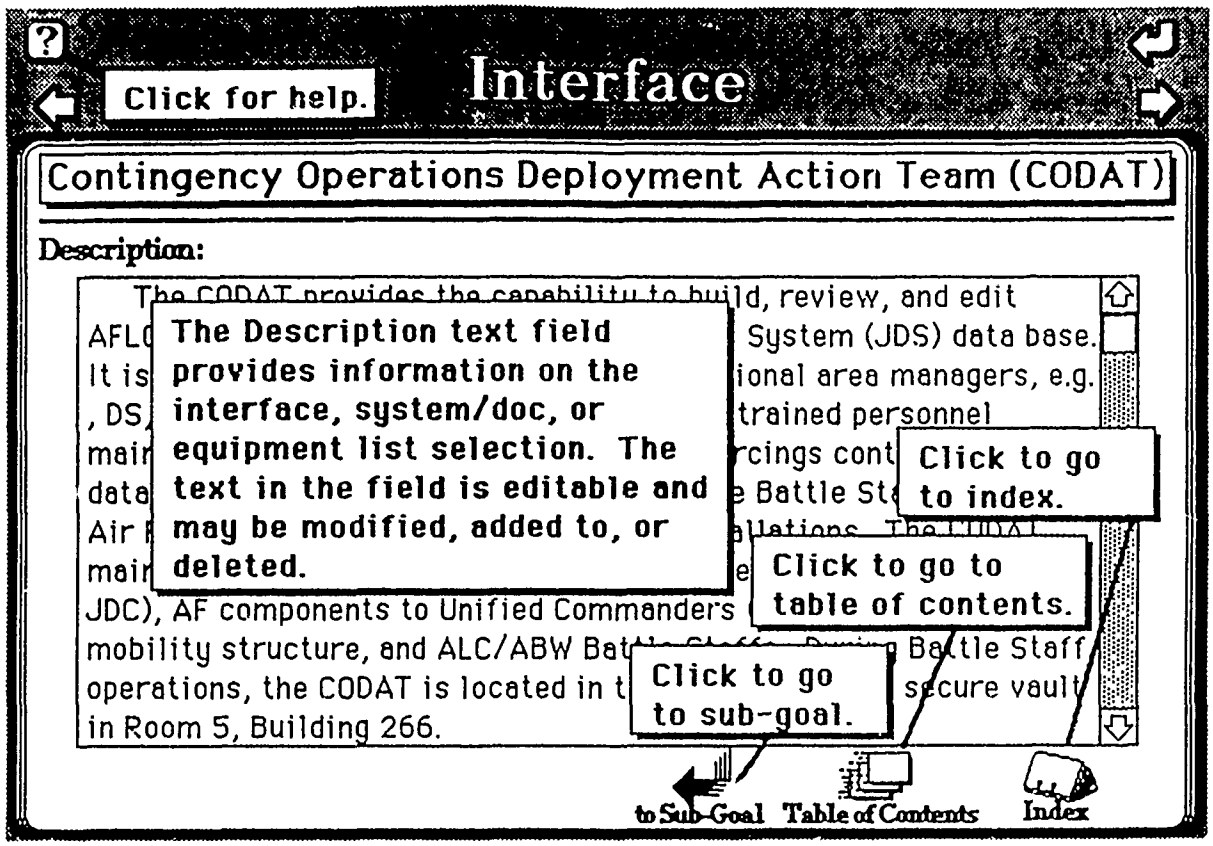

Position: Battle Staff Director
GOAL
SUB-GOALS
Unlock
Sends the Battle Staff activation/
deactivation messa
1 Determines Battle Staff
readiness.
ssage.
essage.
message.
eleases message.
Description:
The Battle Staff Direc
notifies all concerned pa
formation (and readines
the HQ AFLC Battle Staff
BSD also notifies all con
when the Battle Staff is
operating or is acting as
"Dog-ears" may be used on several screens to "turn the pages" of the document. On this screen, for example, you can click the lower left dog-ear to look at goal one or the lower right dog-ear to look at goal three.
Note current and total number of goals.
Left dog-ear.
Right dog-ear.
Goal 2 of 7
Chapters
Table of Contents
QUIT

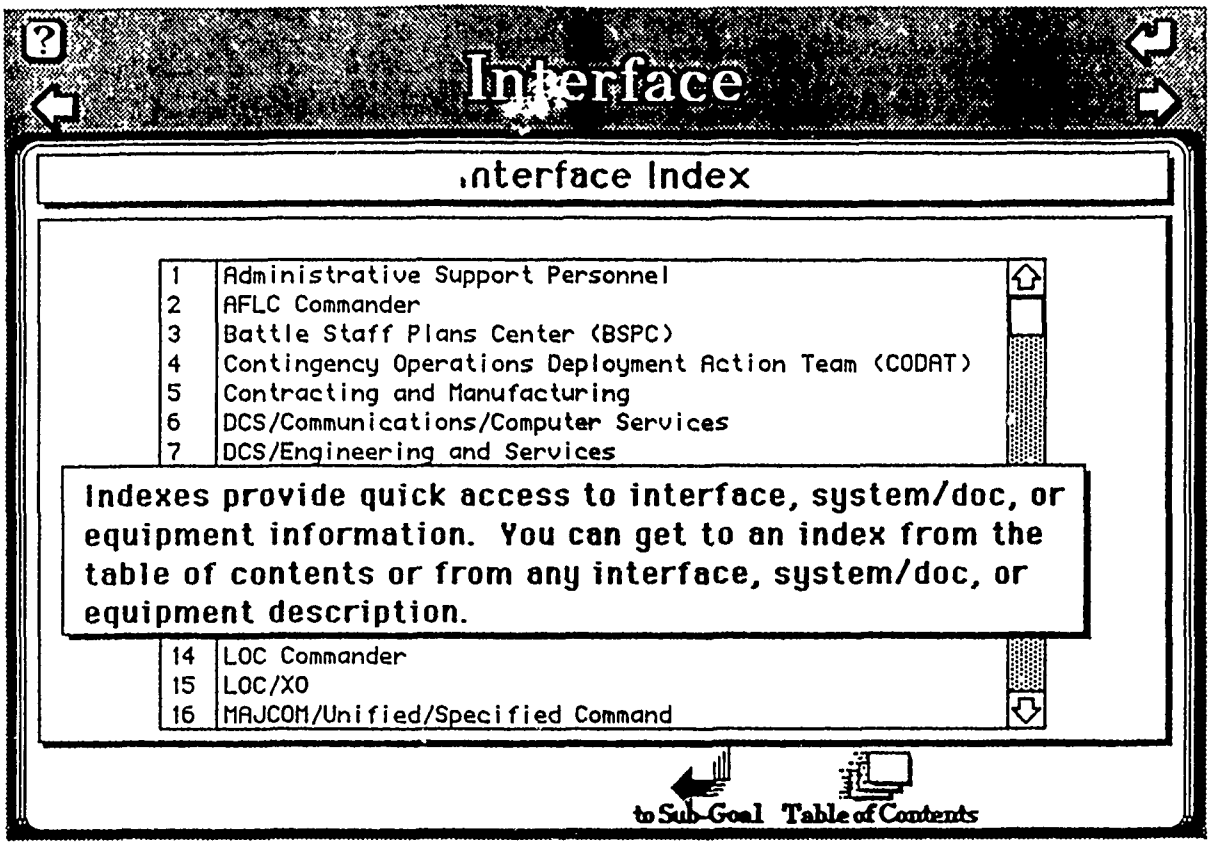

Position: Battle Staff Director
Goal: Ensures Required Staffing
SUB-GOAL
Analyzes initial situation.
Interfaces
System/Doc
Equipment
The sub-goal screen shows a position and goal title on the very top of the screen, a sub-goal title in the upper left field, and a sub-goal description in the lower left screen. When viewing sub-goals, the interface, system/document/ regulation (System/Doc), and equipment information are accessed through the appropriately marked buttons on the right page.
analyzing the initial situation and/or determining the need for convening the Battle Staff. It is primarily a list of those
Sub-Goal 1 of 6
to Goal
Table of Contents

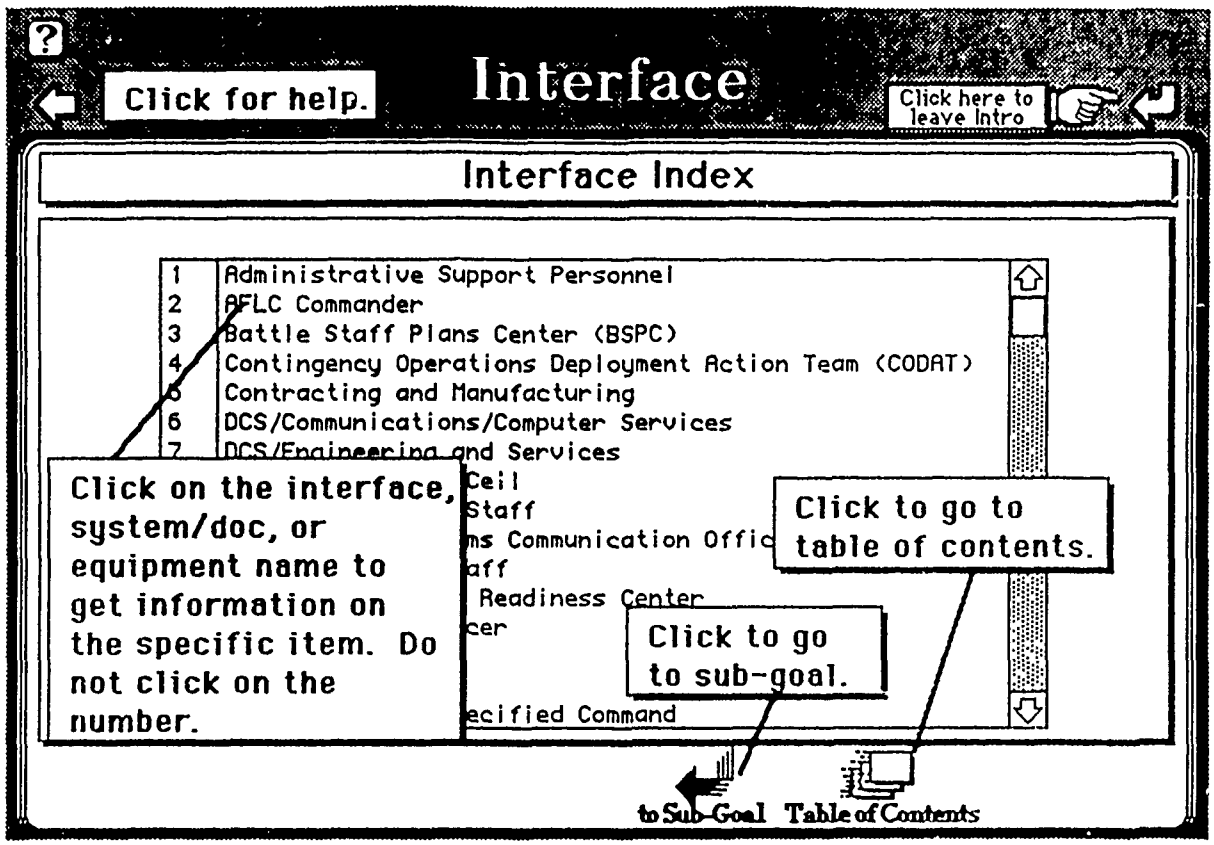

Position: Battle Staff Director
Goal: Ensures Required Staffing
SUB-GOAL
Analyzes initial situation.
Description:
Reviews all data/information relative
Interfaces
System/Doc
Equipment
Contingency Operations Deploym
Emergency Action Cell
Manpower and Personnel Readine
WWMCCS Watch Team
LOC Commander
LOC/XO
Clicking on any one of these buttons will produce a list of interfaces, systems/documents, or equipment with which a person performing the particular sub-goal must interact. Click on an item in the list and you will be provided a description of the interface, system/document, or equipment.
analyzing the initial situation and/or determining the need for convening the Battle Staff. It is primarily a list of those
Sub-Goal 1 of 6
to Goal
Table of Contents


Position: Battle Staff Director
Goal: Ensures Required Staffing
Click for help.
Click on these buttons for info list.
SUB-GOAL
Analyzes initial situation.
Interfaces
System/Doc
Equipment
Contingency Operations Deploym
Emergency Action Cell
Manpower and Personnel Readine
WWMCCS Watch Team
Focal
Exercise Control Staff
Click on a line to see specific information.
Click on arrows to see rest of list.
Description
Reviews
to the need for convening the Battle Staff.
Assesses the pertinent facts and
formulates
operations
The Narrative contains context sensitive general information on the interface, system/ doc, or equipment button clicked above.
Narrative:
Interfaces:
This is a list o
likely to have in
uation and/or
or convening the
a list of those
Click to go back to table of contents.
Click to go back to Goal.
Sub-Goal 1 of 6
to Goal
Table of Contents


Interface
Contingency Operations Deployment Action Team (CODAT)
Description:
The CODAT provides the capability to build, review, and edit AFLC force taskings in the Joint Deployment System (JDS) data base.
The interface, system/doc, or equipment description is a scrolling text field of information. To return to the sub-goal you started from, click the sub-goal button on the bottom of the screen.
maintains constant contact with the Joint Deployment Community (JDC), AF components to Unified Commanders (CINCs), the AFLC mobility structure, and ALC/ABW Battle Staffs. During Battle Staff operations, the CODAT is located in the AFLC LOC/XOXR secure vault in Room 5, Building 266.
to Sub-Goal
Table of Contents
Index


Click for help.
Interface
Contingency Operations Deployment Action Team (CODAT)
Description:
The CODAT provides the capability to build, review, and edit
AFLC System (JDS) data base.
It is ional area managers, e.g.
, DS trained personnel
mair rcings cont
data e Battle St
Air F
mair e
JDC), AF components to Unified Commanders
mobility structure, and ALC/ABW Bat Battle Staff
operations, the CODAT is located in t secure vault
in Room 5, Building 266.
The Description text field provides information on the interface, system/doc, or equipment list selection. The text in the field is editable and may be modified, added to, or deleted.
Click to go to index.
Click to go to table of contents.
Click to go to sub-goal.
to Sub-Goal
Table of Contents
Index


Interface
nterface Index
1 Administrative Support Personnel
2 AFLC Commander
3 Battle Staff Plans Center (BSPC)
4 Contingency Operations Deployment Action Team (CODAT)
5 Contracting and Manufacturing
6 DCS/Communications/Computer Services
7 DCS/Engineering and Services
Indexes provide quick access to interface, system/doc, or equipment information. You can get to an index from the table of contents or from any interface, system/doc, or equipment description.
14 LOC Commander
15 LOC/XO
16 MAJCOM/Unified/Specified Command
to Sub-Goal
Table of Contents


Click for help.
Interface
Click here to leave Intro
Interface Index
1 Administrative Support Personnel
2 AFLC Commander
3 Battle Staff Plans Center (BSPC)
4 Contingency Operations Deployment Action Team (CODAT)
5 Contracting and Manufacturing
6 DCS/Communications/Computer Services
7 DCS/Engineering and Services
Cell
Staff
ms Communication Offic
aff
Readiness Center
cer
ecified Command
Click on the interface, system/doc, or equipment name to get information on the specific item. Do not click on the number.
Click to go to table of contents.
Click to go to sub-goal.
to Sub-Goal
Table of Contents

```
--  ************************************************************
--  *                                                          *
--  *  Developed for the AF Human Resources Lab,               *
--  *  Logistics & Human Factor Division, Gouund Operations    *
--  *  Branch (AFHRL/LRG) by Systems Exploration, Inc.         *
--  *                        5200 Springfield Pike, Suite 312  *
--  *                        Dayton, OH  45431                 *
--  *                                                          *
--  *  Data collection: Ben Malin & Art Schwaninger            *
--  *                                                          *
--  *  Programming:  Major Rob Hall                            *
--  *                                                          *
--  *  Programming & Data Entry: Colleen Gumienny              *
--  *                                                          *
--  *  Requires Hypercard 1.2.2 or better
--  *                                                          *
--  ************************************************************
on openStack
  -- Clean up windows and initialize menuName variable.  Global variable
  -- menuName is passed by interface, doc, & equipment buttons on sub-
  -- goal screens.
  global menuName
  hide menubar
  set the location of message window to 20,365
  put "Interfaces" into menuName
end openStack

on mouseUp
  -- This handler intercepts the mouseUp message passed by the interface,
  -- system/doc, or equipment buttons.  It displays a scrolling field
  -- of information and sets the scroll of the narrative field.
  global menuName, hort
  -- Determine if mouseUp is from interface, system/doc, or equipment
  -- buttons.
  if the short name of the target is "Interfaces" or the short name¬
  of the target is "System/Doc" or the short name of the target is¬
  "Equipment" then put "go" into temp
  else
    exit mouseUp
  end if
  -- Display scrolling field with appropriate scrolling buttons.
  set hilite of background button menuName to false
  get the short name of the target
  put it into menuName
  set hilite of background button menuName to true
  show background field "Display"
  show background button "ScrollLeft"
  show background button "ScrollRight"
  show background button "ScrollButton"
  set the style of background button "Scroll" to transparent
  set the scroll of background field "Display" to 0
  put 0 into hort
  scrollLeft
  put menuName&1 into Name
  put background field Name into background field "Display"
  -- Set the scroll of the narrative field
  if menuName is "Interfaces"
  then set the scroll of background field "Narrative" to 0
  else if menuName is "System/Doc"
  then set the scroll of background field "Narrative" to 600
  else if menuName is "Equipment"
  then set the scroll of background field "Narrative" to 1200
end mouseUp
```

```
on makeScroll
  -- This custom handler puts data into the five fields used in the
  -- horizontal scroll of interface, doc, & equipment information on
  -- a subgoal screen.  The handler is used when populating the display
  -- field with interface, doc, or equipment information.
  global menuName
  set cursor to watch
  -- Hort used to keep track of horizontal segment of a text line. All
  -- lines displayed will be thirty characters long.
  put 0 into hort
  put background field "Display" into title
  put background field "Display" into background field menuName
  repeat with count = 1 to 5
    repeat with count1 = 1 to (number of lines in title)
      repeat with count2 = hort to (30 + hort)
        put char(count2) of line(count1) of title after text
      end repeat
      put text&return after textline
      put empty into text
    end repeat
    put menuName&count into Name
    put textline into background field Name
    if count = 1 then put textline into background field "Display"
    put empty into textline
    put hort + 6 into hort
  end repeat
  show background button "ScrollLeft"
  show background button "ScrollRight"
  show background button "ScrollButton"
  set style of background button "Scroll" to transparent
end makeScroll

on scrollRight
  -- This custom handler swaps fields to simulation horizontal scroll
  -- to the right.
  global hort, menuName
  put hort + 1 into hort
  if hort > 5 then put 5 into hort
  put menuName&hort into Name
  put background field Name into background field "Display"
  set loc of background button "ScrollButton" to 261+hort*42,205
end scrollRight

on scrollLeft
  -- This custom handler swaps fields to simulation horizontal scroll
  -- to the left.
  global hort, menuName
  put hort - 1 into hort
  if hort < 1 then put 1 into hort
  put menuName&hort into Name
  put background field Name into background field "Display"
  set loc of background button "ScrollButton" to 261+hort*42,205
end scrollLeft

on showHiddenWindows
  -- put everything in sight
  repeat with count = 7 to 24
    show background field count
    set the loc of background field count to 300,15*(count-6)
  end repeat
end showHiddenWindows

on hideHiddenWindows
  -- get everything out of the way
```

```
  set the loc of background field "Interfaces" to 200,365
  set the loc of background field "System/Doc" to 200,365
  set the loc of background field "Equipment" to 200,365
  repeat with count = 1 to 5
    put "Interfaces"&count into Name
    set the loc of background field Name to 200,365
    put "System/Doc"&count into Name
    set the loc of background field Name to 200,365
    put "Equipment"&count into Name
    set the loc of background field Name to 200,365
  end repeat
end hideHiddenWindows

on showMessageBox
  set the loc of message box to 15,300
end showMessageBox
```

APPENDIX E: AFIT SCHOOL OF SYSTEMS AND LOGISTICS CONTINUING EDUCATION PROGRAM

AFIT SCHOOL OF SYSTEMS AND LOGISTICS CONTINUING EDUCATION PROGRAM

The AFIT School of Systems and Logistics Professional Continuing Education Catalog for 1988-1989 offers the following courses which would benefit most Battle Staff members and the BSD in particular.

1. LOG 299, Combat Logistics. This course provides an overview of the wartime roles and responsibilities of the logistics manager and an understanding of how logistics contributes to the overall war effort. It provides an introduction to combat logistics planning, strategies, and contingency procedures that will likely be implemented in a wartime scenario.

2. LOG 399, Strategic Logistics Management. This course is designed to increase student understanding of the total logistics system from the national through the operating levels and improve the decision-making skills of logistics managers at those levels. Heavy emphasis is placed on simulated operational deployment, long-range support, retrograde, and disposal.

3. LOG 499, Logistics Executive Development. This course is designed to provide senior logistics managers the opportunity to examine the interpersonal and organizational skills, management techniques, and values affecting Air Force logistics programs. It provides innovative approaches to leadership, decision-making, and problem solving, and an opportunity to exchange ideas and assess common problems among the various logistics disciplines.